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H.R. 5715

GOVERNMENT PATENT POLICY ACT OF 1980

HEARING

BEFORE THE

SUBCOMMITTEE ON
SCIENCE, RESEARCH AND TECHNOLOGY

OF THE

COMMITTEE ON
SCIENCE AND TECHNOLOGY
U.S. HOUSE OF REPRESENTATIVES

NINETY-SIXTH CONGRESS

SECOND SESSION

FEBRUARY 8, 1980

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CONTENTS

WITNESSES

February 8, 1980:

	Page
Panel consisting of Dr. Jordan Baruch, Assistant Secretary of Science and Technology, Department of Commerce; Ky Ewing, Jr., Deputy Assistant Attorney General, Department of Justice; and Charles Herz, General Counsel, National Science Foundation	5
Panel consisting of Kenneth Payne, Secretary, Licensing Executive Society; Frank Lindsay, chairman of the board, ITEK Corporation, and Chairman, Research and Policy Committee, Committee on Economic Development; Harry Manbeck, General Counsel, General Electric Corporation; Eric Schellin, Small Business Legislation Council; and Howard Rose, chairman, Patent Task Force, Institute of Electrical and Electronic Engineers, Inc	89

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H.R. 5715

GOVERNMENT PATENT POLICY ACT OF 1980

FRIDAY, FEBRUARY 8, 1980

HOUSE OF REPRESENTATIVES,
COMMITTEE ON SCIENCE AND TECHNOLOGY,
SUBCOMMITTEE ON SCIENCE, RESEARCH AND TECHNOLOGY,
Washington, D.C.

The subcommittee met, pursuant to notice, at 9 a.m., in room 2325, Rayburn House Office Building, Hon. Allen E. Ertel, presiding.

Mr. ERTEL. Good morning.

I think initially I will make an opening statement as to the purpose of these patent hearings, and then we will go ahead with Dr. Baruch's testimony.

Government patent policy is a controversial and emotional issue that has been debated in Congress, industry, the university community and the executive branch for 30 years without a satisfactory solution.

However, I believe that, given the considerable effort that has been expended by the administration on this issue during the past year, and the current legislative initiatives before both the House and the Senate, we are not in a position to resolve this controversy, and I assume Dr. Baruch would agree with that.

I am particularly heartened by the administration's effort to move forward with patent reform. The President's draft government patent bill represents the first time that a President has proposed a comprehensive set of reforms in this area. I want to congratulate the administration for its initiative.

The bills which we shall examine today—the administration bill and my own bill, H.R. 5715—both propose changes which are comprehensive in nature and which will cover all Federal contractors and grantees.

I believe strongly in an approach which does cover all Government contractors because I believe that, without full coverage, we will not even begin to achieve the objectives which these bills seek to attain.

What are these objectives?

One, we need to increase the commercial utilization of federally funded inventions in order to maximize the potential for innovation and for improvements in productivity.

Two, we need to establish a uniform Federal patent policy so that qualified Government contractors and grantees are not dis-

couraged from working on Government-sponsored R. & D. projects or from commercializing the results of their R. & D. effort.

Three, we need to insure that the administrative burden associated with any Government-wide patent policy is kept to a minimum.

Four, we need to protect the interests of the American taxpayer by maximizing the return from the investment in R. & D. while assuring that there will be an equitable distribution of the benefits from that investment.

Five, we need to take account of the unique and special role which small business and universities can play in increasing the rate of innovation in this country.

I am aware that not all agree on how these objectives can best be accomplished. At the same time, I am greatly encouraged by the evident shift on the part of many long term opponents of change to a search for a reasonable reform consensus.

I see this hearing as a significant step toward a convergence of views that will ultimately produce this consensus.

[The statement of Mr. Hollenbeck follows:]

HON. HAROLD C. HOLLENBECK
OPENING REMARKS
UNIFORM PATENT POLICY HEARING
FEBRUARY 8, 1980

MR. CHAIRMAN, I CONGRATULATE YOU ON HOLDING THESE HEARINGS TODAY TO DEVELOP A UNIFORM FEDERAL PATENT POLICY ON RESEARCH ARISING OUT OF PUBLICALLY SPONSORED R&D. IT IS HIGH TIME WE ACT AND I COMMEND THE ADMINISTRATION FOR SENDING US THEIR PROPOSAL AT LAST. I ALSO LOOK FORWARD TO WORKING CLOSELY WITH OUR COLLEAGUES ON THE JUDICIARY COMMITTEE AND STAND READY TO ASSIST THEM IN WHATEVER WAY I CAN.

MR. CHAIRMAN, I HAVE JOINED YOU IN COSPONSORING H.R. 5715, THE UNIFORM FEDERAL RESEARCH AND DEVELOPMENT UTILIZATION ACT OF 1979. IT IS SHOCKING THAT THE UTILIZATION OF THE RATE OF FEDERAL PATENTS IS UP AROUND 1% WHEREAS IN PRIVATE INDUSTRY THAT RATE IS UP AROUND 20% TO 30%. IN PART, THIS RESULTS FROM THE FACT THAT PATENTS FROM FEDERALLY-SPONSORED R&D ARE VIRTUALLY USELESS AS A PROPRIETARY ITEM. THEY DO NOT GRANT SOMEBODY, WHO IS WILLING TO SINK THE CAPITAL FOR DEVELOPING AN INVENTION, THE EXCLUSIVE RIGHT TO PRODUCE AND MARKET THAT INVENTION. IN FACT, TESTIMONY BEFORE OUR SUBCOMMITTEE HAS INDICATED THAT THE REAL BUCKS FLOW INTO DEVELOPING A PRODUCT NOT INTO INVENTING IT OR CONDUCTING RESEARCH. H.R. 5715, IN CONTRAST TO THE ADMINISTRATION'S PROPOSAL, WOULD GRANT TO ALL PERFORMERS OF FEDERAL RESEARCH AND DEVELOPMENT, THE TITLE TO ANY INVENTION WHICH THEY MAY MAKE UNDER FEDERAL SPONSORSHIP. I REALIZE THAT SOME WILL

OBJECT TO ALLOWING PERSONAL GAIN FROM THE RESULTS OF PUBLICALLY FUNDED RESEARCH, BUT THE FACT IS THAT NO ONE IS GAINING UNDER THE CURRENT SYSTEM. IT IS FAR MORE IMPORTANT TO GET THESE RESEARCH RESULTS USED. HOWEVER, H.R. 5715 DOES PROVIDE FOR A PAY BACK IF ... INVENTION GROWING OUT OF FEDERAL RESEARCH FUNDS MAKES A PROFIT, THE FEDERAL GOVERNMENT AT LEAST RECOUPS ITS INVESTMENT. ONE OTHER FEATURE WHICH SHOULD BE POINTED OUT ABOUT THIS BILL IS THAT IT GRANTS TITLE -- NOT SIMPLY AN EXCLUSIVE LICENSE TO THE INVENTOR. FOR THE PURPOSES OF RAISING CAPITAL TO FINANCE THE DEVELOPMENT AND PRODUCTION OF AN INVENTION, IT IS IMPORTANT THAT THE INVENTOR HAVE ACTUAL TITLE TO THE INVENTION. IN ADDITION, BY GRANTING TITLE AND HAVING A UNIFORM POLICY ACROSS ALL FEDERAL AGENCIES, WE ELIMINATE AN ENORMOUS AMOUNT OF BUREAUCRATIC PAPER WORK AS WELL AS NEGOTIATING TIME IN THE APPLICATION OF NEW INVENTIONS. AND TIMING IS CRITICAL--BECAUSE VERY OFTEN MARKETABILITY OF A NEW PRODUCT DEPENDS UPON THE TIMING OF ITS ENTRANCE ON THE MARKET. A YEAR'S TIME LOST BECAUSE YOU ARE NEGOTIATING WITH A CONTRACT OFFICER IN A FEDERAL AGENCY ON THE TERMS OF A LICENSE CAN MEAN THE DIFFERENCE BETWEEN ECONOMIC SUCCESS AND FAILURE.

MR. CHAIRMAN, IN CONCLUSION LET ME SAY THAT I HAVE COSPONSORED H.R. 5715 AND DO HAVE BASIC DISAGREEMENT WITH MANY PROVISIONS OF THE ADMINISTRATION'S BILL. I AM CERTAIN, HOWEVER, THEIR PROPOSAL HAS VERY MANY GOOD POINTS WHICH WE CAN INCORPORATE IN ORDER TO BUILD THE STRONGEST POSSIBLE BILL. FOR THIS REASON, I LOOK FORWARD TO RECEIVING THE TESTIMONY TODAY. NO DOUBT BOTH BILLS WILL CHANGE AS THE LEGISLATIVE PROCESS PROCEEDS, BUT THE IMPORTANT THING IS FOR US TO MAKE UP OUR MINDS AND THEN ACT. FURTHER DELAY COMING ON MANY YEARS OF PROPOSAL AND COUNTER-PROPOSAL IS INEXCUSABLE.

THANK YOU.

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Mr. ERTEL. Our first witness for the morning is Dr. Jordan Baruch, the Assistant Secretary of Science and Technology, Department of Commerce. Good to see you again. We have had many discussions.

Mr. Ewing, Deputy Assistant Attorney General. It is nice to see you this morning.

Mr. Charles Herz, General Counsel, National Science Foundation.

We will start with Dr. Baruch.

STATEMENTS OF A PANEL CONSISTING OF DR. JORDAN BARUCH, ASSISTANT SECRETARY OF SCIENCE AND TECHNOLOGY, DEPARTMENT OF COMMERCE, KY EWING, JR., DEPUTY ASSISTANT ATTORNEY GENERAL, DEPARTMENT OF JUSTICE, AND CHARLES HERZ, GENERAL COUNSEL, NATIONAL SCIENCE FOUNDATION

Dr. BARUCH. Good morning, Mr. Chairman.

I want to express my appreciation, indeed my pleasure, at being at this hearing. As you so clearly pointed out, this is the first time that a President has resolved the differences among his agencies and proposed a uniform patent policy.

The President's patent policy proposal applies to the disposition of rights with respect to patents developed with Federal Government financing. This is not an attention grabbing issue. However, it is of extreme importance in terms of public benefits and equity.

Mr. Chairman, clearly I am deviating from my written testimony. May I ask that my written testimony be inserted in the record.

Mr. ERTEL. Without objection.

Dr. BARUCH. As you have pointed out, for three decades it has been impossible to get a uniform Federal patent policy. For the first time, a uniform patent policy has been agreed to by Justice, the Department of Commerce, and other responsible agencies.

As you have pointed out, a uniform patent policy has many goals. I would like to concentrate on one—utilization.

It is through the utilization of patents, through their embodiment in products and processes, that benefits accrue to the public from the invention. Until such patents are embodied and until goods and processes are made available to the public, no benefit accrues.

Let me go through the points in the President's patent policy proposal and tell you how that policy came about.

There has been long debate between various agencies, and various Members of Congress, which can best be summed up as a conflict between the philosophy of title in the contractor and title in the public.

The title in the contractor proponents frequently point out that contractors have the capability to embody patents in products and processes, to commercialize them, to distribute them, and to bring about benefits to the public.

Clearly that point of view recognizes the need for utilization.

Others, however, with equal justice of intent, propose that patents developed under government funding should be placed in the public domain. Their feeling there is that since the public has paid

for the development, the public should be the sole proprietor of the results.

We feel that both of these approaches fall somewhat short of producing the optimum kind of utilization that would benefit the public.

The President's bill would give title to the contractor when the contractor is either a university or a small business. Both types of organizations are special cases.

Universities have a special role. They create the human resources that make possible the technical and industrial advance of this country, and the royalties that they collect from patents that they commercialize, or that they license, go to the end of increasing their ability to create those human resources.

Furthermore, because of their wide-ranging interests, because they are not engaged in a specific business, they have an incentive to commercialize those patents as widely as possible through the license mechanism.

Small businesses are also a special case, in part in recognition of the enormous role they play in commercializing radical new inventions.

While 50 percent or so of the innovations in the United States eventuate from small businesses, it is a fact that almost all of the really radical innovations eventuate from entrepreneurially driven small firms.

But small firms also have a special need as well as a special ability.

They need title in order to have an asset against which they can raise the kind of equity capital and loan capital that is often so difficult for a small firm to gather.

What is more, because of their fluidity of their business field, they can be expected to commercialize those patents, either by themselves or through licensing over the widest range of use.

Under the President's proposed patent policy, however, larger firms, particularly the big ones that do 95 plus percent of the Government's R. & D. would be treated differently.

We recognize that large firms, in their businesses, have the capacity, the management and the distribution systems to bring the fruits of their inventions to the public.

We also recognize that exclusivity is essential if large firms are to make the investment and take the capital risks necessary to commercialize an invention.

To that end, and in recognition of those facts, the President's patent policy provides for exclusive licensing to contractors in any fields of use that they agree to commercialize, either themselves or by granting licenses.

In all other fields, however, fields which the contractor has no intention of commercializing, the government would retain title and would attempt to license those patents, either through the agencies under which the work was done or by a central licensing operation.

Since any firm, small or large, may, either through inadvertence or intent fail in its commitment to commercialize an invention the President's policy would permit the Government to march in, so that the commercialization of the patents may proceed.

That is a bare bones picture of the President's patent policy. Mr. Ewing, a Deputy Assistant Attorney General, I am sure will discuss some of the legal points.

I am discussing points that are important and visible to me as an inventor and as a former small businessman.

Whenever I discuss the President's patent policy proposal, questions arise. I would like to address some of those questions and provide what I believe are appropriate responses.

One question that often arises is, whether the policy penalizes firms for success by only giving a large firm an exclusive license while small firms get title.

While large firms "only" get an exclusive license, they receive such a license for any and all fields that they agree to commercialize. Thus, for these fields an exclusive license becomes equivalent to title. However, the sense of the question is so contrary to our country's normal behavior that another answer is needed.

We provided unemployment insurance, for example, to people who are out of work. When they get a job, that unemployment insurance stops. Are we penalizing them for success in finding a job? Do we penalize welfare recipients by stopping welfare payments when they no longer have a need?

This is not to imply that we are giving unemployment insurance or welfare to small businesses, but we recognize that small businesses have needs, in addition to their marked capabilities, that are different from the needs of large businesses.

Some critics say that any exclusivity is bad, whether it be title or license. Yet, we know that without exclusivity businessmen small or large, will not undertake the kind of investment that is often required to commercialize an invention.

One of the examples that is sometimes brought up is the family that developed forceps for delivering babies and then kept them a secret for years. Wasn't that kind of a monopoly against the public interest. The answer is yes.

Indeed, that example is a strong argument for patents in general. Had those forceps been patented, there would have been public disclosure. Any monopoly would have had a limited life.

At the risk of making a legal judgment, I question whether a patent on the delivery forceps could have been defended against infringers, because clearly the private use of such a set of instruments is not in the public interest.

The President's proposed patent policy provides march-in rights for such an obvious misuse of a patent.

One of the comments made about the President's patent policy is government licensing—the Government has an atrocious track record of licensing the 27,000 or so patents it already has. That kind of remark, however, shows the danger of the casual use of statistics.

The Government's patent portfolio is largely composed of patents that contractors chose not to claim, patents that were felt not to be useful even for their own business.

That comment is a little like saying Joe has been unsuccessful in marketing garbage, so what makes you think he can sell fresh vegetables.

Mr. Chairman, it is clear that there are few outside witnesses to testify in favor of the President's patent policy. Industry, by and large, would prefer title in the contractor.

That comes as no surprise to anyone, but we feel that the President's patent policy does serve one constituency, the general public, and we hope that the Congress will see the situation as we do.

Thank you, Mr. Chairman. I will be pleased to answer questions.

Mr. ERTEL. Thank you, Dr. Baruch. As always, you have made a provocative and careful argument.

I am interested in some of your points. I am not wild about the analogy you drew concerning unemployment compensation and small business. I am not sure it is even appropriate.

Certainly we try to protect somebody against misfortune, such as unemployment. Then when they become employed, they have improved their situation.

In fact, we hope unemployment doesn't pay the person the same amount they would have in a productive enterprise. To compare that to productive enterprise seems to me to be somewhat of a strain on the analogy.

Are you equating a small business to being basically unemployed, without any productivity? As I understand it, small businesses are, at least in the innovation field, the most productive as far as innovation is concerned in patent production. So, I just don't follow that analogy.

I would be happy to have you expand on it. I think analogies are dangerous, especially in some areas.

Dr. BARUCH. Mr. Chairman, I agree with you wholeheartedly. Small businesses are productive. They are not analogous to the unemployed. They are, however, a segment of business that has a need different from large business, the need to raise venture capital, the need to raise second round financing.

Frequently it becomes useful to the small business to have a special asset, title to a patent, to use to meet that need. I speak from my own experience on this subject, having started a small business with a group of other college professors, and having made a series of inventions which were then used to raise capital. That business grew from a small business to one that no longer meets the small business criteria.

I don't think we felt we were penalized for our success when we no longer came under the small business criteria. Rather, the special consideration given to small businesses under those criteria made it possible for us to grow.

My analogy was strained and indeed inappropriate. But it is frequently the only one I could think of to use easily.

Mr. ERTEL. Well, maybe we shouldn't use an analogy like that one. I understand what you were trying to get across. I do have some questions about this dichotomy between small and large business.

Unfortunately, the world doesn't break down into two categories. There are small businesses, minute businesses, medium-sized businesses, growing businesses, and large businesses.

Chrysler came to us not more than a couple of months ago with this administration's encouragement and argued to us that we should give them a loan guarantee because small business gets a

loan guarantee, and therefore they should be getting loan guarantees, and there is precedent for loan guarantees across the field. They had some of the same needs, which was to increase or change over their ability to have capital, to make changes and so on.

I am not so sure that getting back into this small business-large business sort of rationale makes a lot of sense because I am not sure—what is a small business. How is it defined? Do you know what a small business is as defined in your bill?

Dr. BARUCH. Currently it is defined by the SBA.

Mr. ERTEL. I am not sure what you are saying? Defined by the SBA? By SBA regulation?

Dr. BARUCH. It has been in the past. We would have no objection to putting a definition into the legislation, of course.

Mr. ERTEL. What definition would you suggest? Sales revenue, total volume, turnover of cash, number of employees? Do we have a definition? I guess that is one of the problems I would be interested in.

Dr. BARUCH. The definition we are using is the one that has been used by the Government for some time now, and we have not attempted to arrive at a new definition.

Mr. ERTEL. What is the SBA definition? Do you happen to know?

Dr. BARUCH. It is defined in Public Law 85-536. It is not a regulation.

Mr. ERTEL. How is it defined?

Dr. BARUCH. I don't have it at my fingertips.

Mr. ERTEL. Somebody mentioned less than 500 people. Is that correct?

Mr. HERZ. That is one of the major tests. I think there are two or three tests.

Mr. ERTEL. Sales volume as well?

Mr. HERZ. I believe that is correct. I hesitate to try to answer. We could certainly submit a response to that for the record.

Mr. ERTEL. I think it becomes important because if you make a law like this, you have a small business which is growing, which maybe has some research and development contracts with the government, and has title in the contractor. Then all of a sudden, dramatically, by an expansion, they are over the line. They have got to then learn a whole new set of rules, and go through a whole new negotiation process.

I thought one of the purposes, as I remember your written statement, Dr. Baruch, is being uniform. That was one of your objectives.

It seems to me you are not proposing a uniform policy here. In fact, we have got a policy that is basically nonuniform.

Dr. BARUCH. The goal of uniformity, Mr. Chairman, is uniformity across the Federal agencies. But let me also address an observation of yours that they go through a dramatic change.

I would like to point out that that change is far less dramatic than it may appear. What happens is at one stage they have title to their patent. They are a fluid company. They will try to commercialize it widely.

At the next stage, what they have is exclusivity, a level of exclusivity that even under the tax laws is for many purposes treated as title. This exclusivity is defined in terms of what their fields of business are; not a definition that is part of a major negotiation when they go to get a contract, but which they define and which is automatically granted to them.

So it is not a major a change as you might think. It is a change that is important for the public interest because the larger companies tend not to have the same incentive to license that the small companies do; and where they do, they may simply specify those fields of interest and continue licensing in them.

Mr. ERTEL. I am glad you came that route because that is where I was hoping you would get. You talk about exclusive licensing, let me give you an example. Some years ago I worked on a case, involving pyro-ceram. It was discovered quite by accident. The inventor was working with high temperature optical glasses and came out with pyro-ceram.

Let's assume for a moment he was working under a Government contract in a specified field of use. Corning, I guess, would probably have specified the field of glass use, because he was experimenting with glass.

Now, really, pyro-ceram is a crystal, a ceramic more or less. Would that have been within his field of use if he had discovered that?

What would have happened in the situation where Corning specified the field of use of glass and then, all of a sudden, they discover, quite by accident, that it has a very broad field of use.

Does he have to come back to the Government and negotiate to get additional fields of use, and then would the Government in fact be subject to criticism for giving away some very good potential for other uses where they should be getting a royalty?

At that point, he has a discovered invention. He is giving away something the Government really owns and has not a specified use. Is the Government going to come up under much criticism?

I ask that question because I am interested in knowing the answer.

Then second, administratively, how much negotiation is going to take place?

Dr. BARUCH. At first, Mr. Chairman, I find it difficult to see how the Government would come under more criticism giving it away than they would if they had a principle where the contractor got the entire title and all the rights priority.

Secondly, I am not particularly familiar with the material, in the pyro-ceram case. I would expect that Corning Glass, after seeing its potential utility, as a covering for reentry vehicles and cookware and for other high temperature uses of the material, might have made a specification that covered the high temperature use, high temperature vitreous materials, or some other field of use specification that would cover the businesses they were actually interested in getting into.

I don't think that they would cover its use in billiard balls. I don't know if pyro-ceram has been used for cue balls yet. But it might be a substitute for ivory. I think one can rely on a company——

Mr. ERTEL. I sure don't want to shoot that cue ball. That is all I have to say. Go ahead.

Dr. BARUCH. I think one can rely on the company, Mr. Chairman, to specify a set of fields of use. Where an invention is esoteric, the contractor mights have great difficulty in specifying fields of use even when the invention were made.

Under such circumstances the contractor can say to the contracting agency, "I would like a delay in time to specify fields of use," and it can have it.

I know the Defense Department was particularly concerned, and we think it is important that there be a time for investigation for certain kinds of companies and for certain kinds of inventions.

I don't see that this becomes difficult, and it certainly is less arbitrary than saying we are concerned about whether you can define it, because we are concerned about whether we will be criticized, so we will give you the whole thing by law, and therefore interfere with its commercialization later by others. We do not think that would serve the public interest.

Mr. ERTEL. I am not sure that you really got the heart of my question. No. 1, after the invention is disclosed, and assuming they specified a glass field, you are going to have a controversy whether in fact the development of this is in that field in the first place. There is a real controversy over, whether it is glass.

Second, it seems to me if Corning specified a field of use, they are not going to experiment outside that field of use. They are the ones that have the initial contact.

Therefore, they are not going to come back and get another field of use—they are not going to get that widespread development process—and that is what happened at Corning.

They did look at the widespread uses. Why? Because they knew they had something unique.

But it seems to me if you intend to specialize in one field of use, and there is somebody out there interested in marketing that in another field—that is where you are going to come back to the Government, trying to market those other fields of use.

Evidently the Government hasn't done a very good job of that so far.

Dr. BARUCH. They have never had a chance to do the job.

Mr. ERTEL. They have had a chance. We have had possibilities of Government patents being utilized in the marketplace, people trying to get those patents used. What is our percentage of utilization?

Dr. BARUCH. My assumption is that, given the question of whether the structure of pyro-ceram was crystalline or glass-like, it is unlikely that the company would specify a field of use by specifying construction, but would rather list what it intended to use it for, businesses it is in.

Even if it wanted to explore it for a year, to get some sense of what its applications were, the agency could clearly give it rights to do that.

But let me answer your second part of your question, which is about the Government's record. Yes, as I pointed out, we do have patents. Most of the patents we have are ones that for some reason

or another a company has decided that it does not want and which are not particularly useful in its own fields of use.

Other patents are kept because they are central to a highly specialized mission agency task.

Now, if you take that collection of patents and use that as your base, and analyze the percentage of successes, my feeling is that if we have had any success with that base, it bodes well for our future successes.

Indeed, we find that recently the NTIS patent licensing service has licensed an HEW patent, a patent developed under HEW support—I must remark that I have forgotten what it is for—but it is a pharmaceutical, and the expectation is that it will be produced.

The pharmaceutical will generate royalties to the Treasury of approximately $1 million, and this is the kind of activity that I see as highly useful and highly beneficial to the public.

Mr. ERTEL. Let me just go to one further question. I know Mr. Brown wants to ask you questions.

I think you are saying that we use the march-in rights to guarantee commercialization. Why can't we, if we give title across the board, use march-in rights to guarantee commercialization for all fields of use. In other words, that is an oversight provision.

If I remember your testimony before the Senate correctly, you stated there that you thought that third parties would in fact be the ones that have the oversight because they would say, "Hey, I have got an ability to commercialize in this field, with this particular patent, and it hasn't been done."

Well, wouldn't that be true whether we gave title or whether we gave exclusive use? They are going to be looking, if they haven't commercialized in that field, they will come up under the march-in rights.

If it is exclusive use as you suggest, and they look at that other field, they will just come to the Government and apply for it. Really, isn't it about the same thing?

Dr. BARUCH. March-in rights can be used very successfully under a title bill. But again, if I go back to previous performances of the Government they haven't been. We use them in the President's patent policy as a second line of defense.

Our first line is by asking for definition of fields of use. That means we don't have to go through litigation to exercise our march-in rights.

We don't have to go through a long court proceeding after an administrative action. We have title, and we do not wait for companies to say, "I think I can use that," but we can market those rights actively.

In our effort to publicize available Federal technology, we can point out to companies the applicability of a new monocoque fuselage construction to mobile home use or to some other use.

There is a difference between passive waiting for orders and active marketing. Once you wait for orders, there is a question of how much of a barrier does the third company see before it is willing to come in and say we want that and the Government then exercises its march-in rights and the company refuses to give it up, claiming something or other, and we have to go through litigation.

We will use march-in rights, but only as a second line of defense.

Mr. ERTEL. Why hasn't the Government used the march-in rights? Have they ever used them at all to this point?

Dr. BARUCH. I don't know of cases.

Mr. HERZ. There are a few cases of march-ins or the practical equivalent. In fact, our agency is probably going to exercise march-in rights, shortly. Nonetheless, you probably could count the cases on the fingers of one hand.

Dr. BARUCH. Mr. Brown?

Mr. BROWN. Thank you, Mr. Chairman.

I have to try and simplify this consideration of patent law in my own mind because I am not at all versed in this field.

It seems to me that the administration has proposed this difference in treatment between small business and large business for a fairly simple political reason, and I ask you to comment on this, that the fundamental problem with patents arising out of Government financed R. & D. is the question of equity.

By granting title to these in the contractor, by granting complete rights to getting patents generally, there seems to be a perception that we are increasing a distribution of economic benefit and power in the society which perhaps would be undesirable; in other words, the rich are getting richer from public funds.

We don't mind so much if the poor get richer, small businesses. But those who already have substantial economic power we would object to it. I hear this view expressed in a number of circumstances.

In which case the questions are not so much whether this is an efficient process for commercializing a patent but is there an equitable or good political justification for doing that.

Is my interpretation reasonably accurate on this?

Dr. BARUCH. I think it is an additional set of reasons for doing it this way, Mr. Brown. But I think there are efficiency reasons as well.

Mr. BROWN. You really believe that there are efficiency reasons, that this would, by restricting the right of the large contractor to have complete say so over the patents generated, that this is a more efficient way of commercializing.

Dr. BARUCH. Absolutely, absolutely. Very specifically, I can give you some reasons why that is so. In most cases a large company with a broad patent will use that patent in all of the businesses in which it is engaged.

Now, there will be some cases where this does not happen. Where the company has a leading position in a oligopolistic field, it may find it is economically unwise for it to venture into a new product or a new process.

I am already brushing up against my neighbor to the right here. So a company in general will use a patent in all the fields of business that it is engaged in.

However, the return from licensing a patent, the effort that goes into licensing a patent, is frequently one that a large company chooses not to take in other and strange fields.

First, it has little acquaintance with other and strange fields. Second, the return for the amount of managerial attention required for such a program is often considered too small to be worth the effort.

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Our goal, then, is to say, yes, use it in all the fields of business you are in, but for licensing outside of those fields, let's have a separate group that does that, a group that has the incentive, has the interest, and is concerned about that utilization.

So, we feel there is a real efficiency question.

Mr. BROWN. And that separate group is the Government agency which funded it?

Dr. BARUCH. The Government agency which funded it, but frequently it will choose not to do it because it is likely to be familiar only with a narrow segment of industry.

Failing that, it would go to the patent licensing group that is now established and it would do it.

Mr. HERZ. Mr. Brown. If the company itself wants to go into the active licensing business and designates fields of use in which it wishes to do that, this bill permits it to proceed. The company doesn't have to designate only fields of use in which it wants to develop the invention itself. That was very deliberate.

Mr. BROWN. All right. Now, it seems to me that we have a diversity of patent policies within the Government at the present time. The different agencies follow different policies and with different results.

Have you made a systematic analysis in some rational way of what these differences contribute to policy formation? Have you accumulated data which will allow you to make a judgment that what NASA is inferior to what DOD is doing, and for what reasons this might be the case, as an aid to structuring the policy reflected in this bill.

Dr. BARUCH. The group that developed this policy option for the President was composed of representatives of all those agencies. We did discuss very heavily their experience with the particular policies they follow.

Mr. BROWN. So, in effect the policy that you are presenting to us in this legislation could be considered a distillation of the good points about these different policies that we are following now in an effort to eliminate the bad points.

Dr. BARUCH. I think that would be a good expression. I hope that is what our committee did.

Mr. BROWN. I hope it is, too.

Dr. BARUCH. It is certainly what we tried to do.

Mr. BROWN. Now, it is still probable that any policy that we adopt, we are not going to be certain that the results will be what we had anticipated.

You have stated in your paper on page 6 that there has been disagreement on the policy of the patent law, but more agreement on the results that should be obtained from that. The goals to be achieved, in other words, you can reach pretty good agreement on.

Now, the question that I have stems from looking at new legislation within the framework that this is an experiment. I think we don't look at legislation often enough from that standpoint.

As an experiment, there should be a mechanism in it for determining whether it achieves these desirable objectives, and if it doesn't achieve these desirable objectives, a feedback process which allows us to modify the methodology.

Do you see anything in this other than the workings of the governmental system? You know Congress is supposed to have oversight. The President is supposed to look at the operations of the executive branch agencies.

Is there anything in addition to this general function of the government incorporated in here that would say look at this operation after a period of 5 years and examine whether the goals were being achieved and to what extent, and if not, how can we go about modifying them?

Dr. BARUCH. The bill is silent on that point. I don't know what the administration position would be, but as an engineer and as a scientist I would be most appreciative of seeing that kind of ongoing examination, to see whether we are achieving the purposes we set out to achieve.

I know for my own office in the Commerce Department, where we have many activities and programs intended to spur innovation and productivity, we have just established an Office of Strategy and Evaluation. For every program that we have, that office will set up an evaluation protocol at the start of the program and will perform an evaluation while it goes on.

This is not only so we can either turn it off or continue it, but so that we can learn what we are doing and make it better. I would hope to see the same kind of effort in this.

Mr. BROWN. This practice, of course, is embodied in the concept of zero-based budgeting for a program of the Federal Government. It is not generally used or used as effectively—the concept is not very well developed for doing it for a structure of law that we put into effect. That is the point that I am trying to make here.

Just as a program to spend money on a new laboratory needs to be reviewed periodically to see if the laboratory is achieving anything, so a new experiment of this sort ought to be similarly viewed to see if the objectives which it was intended to accomplish are being accomplished.

In effect, we are grappling with that problem with our so-called sunset legislation and other things of that sort. But I am still looking for a more effective mechanism to do this than the rather amorphous type of review that a congressional committee does or some of the other ways that we go about accomplishing this.

I would rather see it recognized that we are structuring this in an experimental mode with the mechanisms embodied in it to judge it, evaluate it, and make policy changes, if that is possible to do.

I guess what I am asking your advice on is whether we might possibly be able to do that.

Dr. BARUCH. I don't know because you are talking about a new area of endeavor that I have not seen successfully implemented in other laws. I don't have a good model to work from.

Mr. BROWN. That is right. We don't have very good models to work from. Well, since this is a science committee, and not a patent committee, we might think in terms of how we could set up such a model and see if it can work.

I have no further questions.

Mr. ERTEL. Thank you.

One other question, Dr. Baruch.

No. 4 of your policy statement, you said there was unanimity, you stated "recognize the public's equity in products of federally sponsored or supported research and development." Does the administration bill have a provision in it whereby the Government gets paid back under any circumstances for any of the research and development which is done by the private contractors, a recoupment clause, or any kind of royalty payment to the Government?

Dr. BARUCH. Mr. Chairman, we didn't feel it was necessary to put that in the bill because there is a 1976 Executive order requiring each agency to develop recoupment procedures for such activities.

Mr. ERTEL. I thought we were going to try here to incorporate all that into one legislative package. Really, we would be overruling those Executive orders by trying to put it in here.

It would seem to me it would be an appropriate place to put it in by legislation, whether we want recoupment or not. I don't see how we have any equity in the administration bill if we don't have any provision for recoupment at all.

Dr. BARUCH. I guess we felt that because of the existence of that Executive order that is one of the things that would be taken care of by regulation within the agency.

[The prepared statement of Dr. Baruch follows:]

STATEMENT OF

JORDAN J. BARUCH

ASSISTANT SECRETARY FOR SCIENCE AND TECHNOLOGY

U.S. DEPARTMENT OF COMMERCE

ON GOVERNMENT PATENT POLICY

BEFORE THE SUBCOMMITTEE ON

SCIENCE RESEARCH, AND TECHNOLOGY OF THE

HOUSE SCIENCE AND TECHNOLOGY COMMITTEE

FEBRUARY 8, 1980

Mr. Chairman, members of the Committee, I appreciate this opportunity to appear before you today to discuss government patent policy -- the allocation of rights in patentable inventions made in the course of federally sponsored or supported research and development. Government patent policy bears a major responsiblity for the pace of industrial innovation in America and for the ability of the Federal agencies to attract the most qualified contractors to participate in their research and development work. In addition, government patent policy provides us with an opportunity to further the special role in our society played by small businesses and nonprofit organizations.

THE INDUSTRIAL INNOVATION PROCESS

President Carter, in his Industrial Innovation Message to the Congress of October 31, 1979, emphasized that:

> "Industrial innovation -- the development and commercialization of new products and processes -- is an essential element of a strong and growing American economy. It helps ensure economic vitality, improved productivity, international competitiveness, job creation, and an improved quality of life for every American. Further, industrial innovation is necessary if we are to solve some of the Nation's most pressing problems -- reducing inflation, providing new energy supplies and better conserving existing supplies, ensuring adequate food for the world's population, protecting the environment and our natural resources, and improving health care."

Industrial innovation is primarily the responsiblity of the private sector. In our economic system, the management of every firm must decide whether to innovate. Innovation is possible either by developing and marketing new products or by finding and employing new ways of making existing products. Since new products offer opportunities for increased sales, and since new processes can offer cost savings, the profit motive provides a powerful stimulus to innovative activity by the private sector.

While it is the private decision-maker who determines whether innovation takes place, the Federal government can establish a climate which either encourages or discourages innovative activity. Federal actions affect innovation within the firm to the degree that they affect the ability of the firm to innovate or the decision calculus of its executives.

The Importance of Patent Rights

The progress of an invention from idea to commercial product or process ordinarily is long and expensive. The temporary patent monopoly provided for by the Constitution encourages an entrepreneur to invest risk capital to develop an invention secure in the knowledge that, if his efforts are successful, he will have an opportunity to obtain a return on his investment before his competitors are free to copy cheaply what he produced with such difficulty.

Patent rights affect positively the entrepreneur's ability to raise risk capital. Patent rights offer the successful inventor-entrepreneur a respite from competition in which to enjoy the fruits of success.

Patent rights are particularly important to small firms. Firms which do not already possess competitive advantages such as a popular trade name, manufacturing experience, established

channels of distribution, or size, are more likely to need exclusive commercial rights to attract risk capital and recover commercialization costs than firms which do enjoy such advantages. Given our present concerns, this is an important point.

The Record of Small Innovative Firms

While the record of large innovative firms is substantial, the record of small businesses based on technological innovation -- especially those in high technology areas -- is even more impressive. A 1975 study commissioned by the National Science Foundation reported that in the period from 1953 to 1973 about one-half of the major innovations produced by United States industry were made by firms with fewer than one thousand employees and about one-quarter were made by firms with fewer than 100 employees.

Many of you are familiar with the study of the Department of Commerce Technical Advisory Board which showed that in the years from 1969 to 1974, a group of large innovative firms experienced sales growth of 13.2% while a similar group of mature firms had 11.4% sales growth. Despite the similarity of their growth in sales, employment in the mature firms grew by only 0.6% while employment in the innovative firms grew by 4.3% -- over seven times as much.

In this same period, a group of young, high technology businesses enjoyed a sales growth of 42.5% -- roughly three times as great as their larger counterparts. Their employment in that period grew by 40.7% -- almost ten times the rate of the large innovative firms, and some 65 times as much as the large mature firms.

Turning to the actual numbers for the period studied, six large mature firms having combined sales of 36 billion dollars created twenty-five thousand new jobs. At the same time, five young high technology firms with one-fortieth their sales -- 875 million dollars -- created thirty-five thousand new jobs. Five large innovative firms with sales of 21 billion dollars created 106 thousand new jobs.

This evidence runs contrary to the conventional wisdom which holds that innovation, especially when applied to the production process, throws people out of work. In fact, over time innovations that improve the productivity of an industry commonly increase the number of workers employed within the industry.

GOVERNMENT PATENT POLICY

The federal government provides about one-half of all the money spent each year in this country on research and development. The allocation of rights in patentable inventions made during the course of that work affects the pace of

industrial innovation in the Nation through its effect on firms' incentives and ability to innovate. This allocation affects the willingness of firms to undertake government research and development work because they must weigh the benefits of the government dollar against the impact on their commercial business of diverting resources to do government work.

As President Carter observed in his Industrial Innovation Message:

> "For over thirty years the Federal agencies supporting research and development in industry and universities have had conflicting policies governing the disposition of [patent] rights resulting from that work. This confusion has seriously inhibited the use of those patents in industry."

There has been much debate on what Administration policy should be. There has been wide support, however, for nine propositions about a desirable government patent policy. Government patent policy should strive to:

(1) Obtain the best contractor effort for the government;

(2) Maximize technological innovation;

(3) Promote competition within the private sector;

(4) Recognize the public's equity in the products of federally sponsored or supported research and development;

(5) Strengthen the research programs of universities; and

(6) Provide special incentives for small businesses;

and should:

(7) Be uniform, in the sense that like cases should be treated alike no matter which government agency provides the support and in the sense that there should be only a single set of patent regulations with which potential government contractors must deal;

(8) Be flexible, in the sense that differing cases should be treated appropriately, that is, not necessarily identically; and

(9) Be as clear and as simple as possible.

The source of the confusion noted by the President has been the inability, until now, of any Administration to resolve the diverse considerations involved into a single policy. The historical development of existing government patent policies is described briefly in the statement of purpose and need for the Administration's draft Government Patent Policy Act of 1980. At this point, I request that the official draft of the bill, with its accompanying statement of purpose and need and section-by-section analysis, be included in the record. The bill formally will be transmitted to the Congress next week.

This bill implements the President's announcement in his Industrial Innovation Message of support for uniform government patent policy legislation. Participants in the policy debate which preceded the drafting of the Administration bill have argued that the government should implement some form of either a "contractor title" or a "government title" policy. Under a contractor title policy, the contractor would receive title in any invention resulting from federally sponsored or supported research and development, and the government would receive a nonexclusive license to practice the invention. Under the government title policy, the government would receive title in any invention, and the contractor would receive a nonexclusive license to practice the invention.

Proponents of each policy have presented several distinct reasons in favor of their viewpoints. Those in favor of a government title policy argue that the primary purpose of the patent laws is to create an incentive for businesses to engage in research and development activities. A patent provides its owner with the right to foreclose competition for a limited period in the marketing of the covered invention; consequently, if the patent holder is able to commercialize the patented invention, it may be able to recover not only its original research and development costs but also to achieve an advantage over its competitors who are unable to use the invention.

Government sponsorship of research and development, however, generally eliminates some of the risk associated with such activities. The contractor's incentive to perform the work is provided by the payment it receives under the government contract, not by the mere possibility that it may be able to exploit a patented invention at some future time. To provide the contractor with title in the invention, it is claimed, would unjustly enrich the contractor at the expense of the public, which has paid for the research and development from which the invention was made.

Government title supporters further argue that government ownership of inventions will ensure the widest possible availability to the public of the technological knowledge embodied therein. Moreover, contractors do not necessarily need to receive title in federally-financed inventions to induce them to commercialize the resulting inventions. They receive other competitive benefits through their participation in government contracts, such as the opportunity to train key personnel, expand their research facilities, develop know-how, and obtain access to government technology. These benefits could provide any necessary competitive advantage to induce the contractor to commercialize the invention. Even if some form of exclusive rights in the invention is necessary to induce its commercialization, the government contractor is not necessarily

the firm most capable of achieving the desired result. Rather, any need for exclusivity could be satisfied by issuing exclusive licenses after the invention has been identified.

Finally, it has been argued that contractor ownership of inventions may tend to enhance the recipient's market power and therefore may contribute to the concentration of economic power in a limited number of corporations.[1]

Advocates of contractor title point out that government ownerhip with the offer of unrestricted public use has resulted in an exceptionally low rate of commercial application of federal-owned inventions. The costs and risks of commercializing an invention, developing it and its market, often are so substantial that commercialization will not take place or even be attempted in the absence of exclusive commercial rights. Ironically, the free public right to use a federally-owned patent thus results, in practical terms, in a denial of the opportunity to use the invention.

Contractor title proponents also assert that a government title policy discourages the most qualified firms from participating in government research and development projects. These firms often have invested heavily in research and development related to the government project; consequently, their experience and technological advancement would enable them to perform the government contract more inexpensively and more effectively than could other potential contractors. These

firms refuse to bid on the government work, however, because the cost to them of publicly disclosing their independently acquired information in conjunction with the disclosure of an invention made under the government contract would be much greater than the profits they could expect to receive under the contract.[2]

Another problem with the policy of government ownership is that it provides little incentive for contractors to disclose their inventions to the government. Rather, the contractor either may maintain the invention's secrecy or make an incomplete disclosure and subsequently attempt to seek its own patent of the federally-financed technology. The incentive for nondisclosure is especially great for those contractors that would be required to divulge independently-acquired information when they revealed a federally-financed invention to the government. A contractor title policy would ameliorate the disclosure disincentive by eliminating the financial penalty associated with disclosure. Further, a contractor title policy would create an incentive to disclose by providing contractors with property rights in federally-financed inventions on the condition that such inventions are reported to the government.

The conflicting arguments of the government title and contractor title proponents lead to one conlcusion: neither policy, alone, provides the most beneficial means for allocating rights to federally sponsored or supported

inventions. Although a contractor title policy may induce both an increased participation in government research and development projects and a higher commercialization rate of federally-financed inventions, such a policy would be unnecessary to induce participation or commercialization in many instances. Under a government title policy, many qualified contractors nevertheless would participate in the government contracting process and some federally-financed inventions would be commercialized. In such situations, implementation of a contractor title policy could be unnecessary and possibly might conflict with the public interest. Strict adherence to a government title policy, on the other hand, would prevent not only the most qualified contractors from participating in certain government research and development projects but also the commercialization of certain inventions.

One possible resolution would be a general government title policy under which the agencies possessed liberal authority to induce the participation of the most competent contractors by waiving government rights in the invention at the time of contracting. In addition, the government could induce the commercialization of any invention in which it holds title by deciding to grant any necessary exclusive license after the invention had been identified. The administrative burdens created by this policy, however, make it impractical and

undesirable. An agency would be required to allocate much of its resources to the negotiation with the contractor of the appropriate allocation of invention rights, a subject of only secondary importance to the agency when compared to the primary purpose of the contract. Moreover, each agency would be required to allocate vast resources to the evaluation and promotion of federally-owned inventions. If an agency failed to grant any necessary exclusive license, the penalty paid by the public would be the noncommercialization of the invention.

The President's patent policy would reduce the administrative burden and the uncertainty that accompany present policies. The proposal, which includes elements of both the government title policy and the contractor title policy, allocates patent rights in federally sponsored or supported inventions according to unambiguous, generally applicable rules. Contractors that are small businesses and nonprofit organizations will receive title in federally-financed inventions, but the government will retain title in inventions made by all other contractors. Ordinarily, the other contractors automatically will receive exclusive licenses in whatever particular fields of use in which they agree to commercialize the invention.

The receipt of title by small businesses and nonprofit organizations is intended to provide these contractors with an advantage over their larger competitors. The advantage is justified by the special place of these organizations in our society. It also is justified by the fact that, unlike larger contractors whose commercial interest in an invention is apt to be limited by the fields in which it already is, or is planning to become, engaged, small businesses and nonprofit organizations share a strong incentive to attempt to commercialize an invention to the widest possible extent.

The President's decision to provide contractors other than small businesses and nonprofit organizations with automatic exclusive licenses in particular fields of use recognizes that a complete transfer of title to the contractor usually is unnecessary to induce its participation in government research and development work and its commercialization of the invention. The government retains the right to license the invention or otherwise make it available to the public in all fields of use not selected by the contractor.

Although the contractor will know at the time of contracting that it automatically will be able to receive exclusive licenses under any forthcoming invention in particular fields of use, it will not actually receive those

licenses until the invention has been identified, its intention to commercialize has been announced, and its selection of fields of use have been submitted to the contracting agency. After the contractor has submitted complete information regarding the invention, its intention to commercialize, and its selection of fields of use, the agency has ninety days in which it may determine whether the contractor's acquisition of an exclusive license in any selected field of use would be contrary to the requirements of the agency's mission, national security, or the antitrust laws. To reduce administrative burdens and to increase the security of the contractor's expectations of receiving exclusive commercial rights in the invention, the scope of the agency's possible inquiry underlying this determination is limited. An agency review will focus only on those unforseen circumstances of which it has become aware since the time of contracting that now require it to deny the contractor exclusive commercial rights with respect to a particular field of use. The contractor will not be denied an exclusive license solely on the basis of facts that were known or reasonably foreseeable by the agency at the time of contracting. If such facts do exist at the time of contracting, an agency normally will deviate from the standard patent rights clause so that the contractor will know at that time that it will not receive an exclusive license to practice a forthcoming invention in a particular field of use.

The agency's ability to deviate from the standard patent rights clause and to terminate a contractor's title or exclusive rights in an invention provide it with additional flexibility to fulfill its mission and protect the public interest. Although these powers are intended to be exercised only in unusual circumstances, they are available to assist the agency in fulfilling its mission, protecting the public interest, and promoting the commercialization of contract inventions.

CONCLUSIONS

Enactment of this bill would stimulate the industrial innovation process by contributing to the more effective utilization of inventions made in the course of federally sponsored or supported research and development work. Further, the bill would resolve longstanding policy issues, answers to which the Congress, the Executive Branch, industry, and the public actively have sought for a generation. The bill is designed to reduce the administrative burden now imposed upon contractors and Government agencies alike.

Further, the bill responds to the 1972 recommendations to the Congress of the bipartisan Commission on Government Procurement, that legislation be enacted which would make uniform the Federal practices in the area of allocating the rights to contract inventions and make clear the government's authority to grant exclusive licenses under federally-owned inventions. The bill also would codify the basic policy concepts of Executive Order 10096, the provisions of which uniformly would be applicable to all Federal employees.

It is anticipated that, following enactment and implementation of this bill, greater commercial use will be made of the technology resulting from the Federal government's research and development effort, in turn creating additional employment, a higher standard of living, and an overall economic benefit to the United States as a whole, while protecting the public against any possible wrongful contractor conduct.

FOOTNOTES

1 There is little evidence, however, that patent policy has had any impact on market structure. A 1968 study by Harbridge House, Inc., probably the most extensive study of government patent policy ever done, indicates that most contractors have been willing to license patents obtained from government research, thereby enabling new or small firms to establish a position in the market. Further, a 1977 study by Utterback and Murray, of the M.I.T. Center for Policy Alternatives, revealed that government procurement of innovative products from small firms was a much more important influence on industry development than government patent policy.

Even if there were evidence indicating that research under a contractor-rights policy increases the market power of large firms, this more effectively could be considered in the selection of contractors. By adopting this strategy, competition would be improved not just through the allocation of patent rights but also through the allocation of contract funds, where most of the competitive impact appears to occur. Moreover, explicit "march-in" rights to address instances where demonstrable anticompetitive effects result from the granting of exclusive commercial rights are a final assurance that a properly designed policy of giving contractors exclusive commercial rights need have no significant anticompetitive potential.

2 To some, the degree to which government patent policy encourages or discourages contractor participation in government research and development programs is the single most important consideration. Advocates of one and another policy have disagreed over the extent to which the ancillary benefits from government sponsorship and support assure adequate participation. These benefits include the government dollar itself, the know-how developed by the firm, and the attendant advantage over other firms in competition for follow-up development and procurement by the government. There is very little empirical evidence on the effect of government patent policy on firm participation in the contracting process. The Harbridge House study contains case studies in which firms refused to undertake government contracts under a government title , no rights to the contractor, policy. However, the study gives no indication of the significance of the problem beyond stating that the policy choice is most important where the prospective contractor is engaged in similar research for a commercial business in which patent protection is important.

This seems a reasonable conclusion. Presumably, the government only sponsors or supports research that is not being pursued adequately by the private sector on its own. This research represents projects for which the expected return without government support is less than the research and development cost required for invention. If many firms are capable of performing the research, they compete by announcing the lowest payment for which they will undertake a particular project. Firms will have similar perceptions of expected benefits because any rights to inventions can be sold. Moreover, if firms value their inventive inputs at opportunity costs reflecting their productivity in related research, then estimates of cost will be very similar. That is, firms with skilled research staffs will require less of their more valuable time to complete a project than those with inferior personnel. Consequently, the breakeven payment for all firms will be approximately the same, and competition for the award will drive down the required government funding to that level.

The only difference between policies which do or do not assure the contractor exclusive commercial rights is that the firm includes the value of the patent in its calculation of expected return when it operates under the more favorable policy. Without the prospect of exclusive commercial rights, firms will require a larger payment from the government to breakeven. Under either policy, however, the government should be able to offer most qualified firms adequate econmic incentives to participate in the contracting process.

Contractor rights advocates argue, however, that a firm which has invested its own resources in the field of research will not participate under an unfavorable policy because proprietary information used in completing the contract must also be turned over to the government. The value of that information includes monopoly profits from other inventions that the firm could market in the private sector. Therefore, the opportunity cost and breakeven payment for the contract will be higher for the advanced firms than for other firms. As a result, the advanced firm will choose in some cases not to participate in the contracting process.

Mr. ERTEL. Thank you. I think we better go on. I believe Mr. Ewing is our next witness. We will probably be asking questions you will want to answer as well.

Mr. EWING. Mr. Ertel, thank you very much.

I very much appreciate the opportunity to appear today with the Department of Commerce and with the National Science Foundation to announce the Department of Justice's strong support of the administration's proposed Government Patent Policy Act of 1980.

With the chairman's permission, I would appreciate if my written statement could be printed in full in your record, and you would permit me to summarize it.

Mr. ERTEL. Without objection, so ordered. We would appreciate it if you would summarize it.

Mr. EWING. Thank you, sir.

The Department of Justice undertook to reexamine its own positions on the issue of Government patent policy almost 18 months ago.

After that reexamination, which took place at the same time that the general interagency group was meeting on issues of Government patent policy, we determined that the goals we had traditionally sought to achieve through our adherence historically to a title in the Government approach were not being as effectively achieved as they should be.

Consequently, we did, Mr. Brown, exactly what you are proposing should be done. We truly reexamined the literature, and the experience that was collected in various studies. We listened carefully to the other agencies of Government as they told us their experiences in these meetings, and we tried to think through once again what it was we were interested in achieving from any particular uniformity in Government patent policy.

The Department of Justice, as well as many others, now believes that Government patent policy legislation is necessary, not only to increase competition for Government research and development contracts, and to stimulate recipients of Government research and development assistance, but also to improve the prospects for innovation nationally.

We believe the successful accomplishment of these goals will provide the American economy with some tangible benefits, including additional competition in foreign and domestic markets, new and improved products, more jobs, a better competitive posture internationally, and a reduction in the private and public costs of the Government's research programs.

The Justice Department's interest in Government patent policy legislation flows, of course, principally from our antitrust enforcement mission to make competition work in our economy.

Innovation is as vital an element in the competitive process as the competitive process is in the success of this Nation's economy. Measures that will encourage greater innovation, such as the proposed administration bill, will benefit consumers by creating additional competition in the introduction of new products and services.

This subcommittee is already well aware of the traditional ways in which our system has sought to encourage innovation, including among others the patent system and Government sponsored and encouraged research and development.

We believe that at this time our Government patent policy should harmonize at least five partially inconsistent goals.

First, it should have a built-in mechanism or built-in mechanisms that permit the Government to protect adequately the public's equitable interest in inventions resulting from Federal Government funding.

Second, it should encourage private contractors to exert their best efforts, as well as encourage their widest possible participation in Government sponsored research and development programs.

Third, it should assure that inventions resulting from Government funding will be fully disclosed to the responsible agency.

Fourth, it should induce the commercialization under the most competitive circumstances possible of any economically valuable inventions resulting from Federal funding.

Finally, the policy should eliminate any unnecessary administrative costs incurred by the Government or its contractors as a consequence of a Federal agency's management of patent rights.

As this committee certainly knows, these goals are now being accommodated in a number of different ways, and there is in fact no comprehensive legislation controlling the disposition of rights to inventions made by Government contractors.

As a consequence of this vast array of statutes and regulatory activities, the agencies have adopted a variety of nonuniform and sometimes conflicting policies governing disposition of rights to inventions.

Some agencies grant title in a majority of instances. Others generally retain title for the Government. Unless prohibited by statute, nearly all agencies waive title to the contractor under certain circumstances.

Moreover, some agencies that are subject to more than one statutory and regulatory scheme have adopted patent rights allocation policies that vary according to the particular research and development program in which the contractor is to participate.

This lack of uniformity in our judgment has created confusion among contractors who perform research and development activities for several agencies or under several programs.

The administration's bill, which embodies the President's proposal for a uniform Government patent allocation system, as well as H.R. 5715, would replace these numerous conflicting patent allocation policies with a single, uniform Government patent policy.

Dr. Baruch has already described the administration's proposal. I think it can be further summarized by saying that the administration's bill generally provides for the Government to take title to inventions resulting from Federal funding.

However, contractors would receive exclusive licenses in fields of use that they specify and in which they agree to commercialize the inventions so long as the receipt of those rights is not inconsistent with the public's interest in those inventions.

The contractor would not have to specify these fields of use until after the invention is made and known to the contractor. It would not be a specification at the time of contracting.

That is a very important point to recall as we look toward that goal of commercialization of the inventions arising from Government sponsored research.

The Government retains the right to license the invention or otherwise make it available to the public in fields of use not selected by the contractor. In addition, the Government receives a royalty free, nonexclusive right to practice the invention.

March-in rights are granted and can be exercised where necessary to commercialize the invention, to protect the national security, to meet requirements for public use specified by Government regulation and to correct situations inconsistent with the antitrust laws.

Clearly the bias, if you will, of the administration's bill toward the granting of exclusive rights to contractors is intended to promote the commercialization of funded inventions, to increase the contractor's incentives to disclose fully the results of funded research, and to reduce the agency's administrative costs in making determinations on allocation of patent rights; and finally, to increase competition for Government sponsored research and development projects.

H.R. 5715 would, of course, seek to accommodate the policy goals I have described earlier by a series of steps much like the administration's proposal as far as the way it would work in the field.

The most important policy differences between the contractor title approach embodied in H.R. 5715 and the administration's proposal is that only the latter provides the Government with the opportunity after an invention has been disclosed, but before exclusive rights are vested in the contractor, to determine whether the contractor's receipt of such rights is consistent with the public's interest in the invention.

The opportunity to make such a determination after the contours of the invention have been revealed to the Government should, in our view, be an essential feature of any Government patent policy legislation.

If at the time the invention is disclosed the agency can conclude that the contractor's acquisition of exclusive rights would be contrary to the agency's mission, would be detrimental to the national security, or would result in substantial competitive harm, it seems to us essential that the Government be able to prevent or otherwise limit the contractor's receipt of those rights.

If I may, I would like to go into the context in which this would be done at a little greater length, because it is important in understanding it. In order to comprehend the potential impact on the Federal contracting process of the Government's right to conduct inquiries into identified inventions, it is important to view this right in the context of the options established under the administration's bill.

Under the administration's proposal, an agency may at the time of contracting deviate from the patent rights allocation system provided in the bill, so long as the deviations are made in furtherance of the agency's mission and the public interest.

A deviation may permit the contractor to acquire more or fewer rights in inventions than it would normally receive. The intent in providing this deviation authority is to encourage the agencies to inform contractors at the outset of the contracting process that forthcoming invention rights will not be allocated in conformance with the provisions of the bill.

Because this deviation authority would exist under the administration's proposal at the contracting stage, it is anticipated that agencies will intervene at the post disclosure stage to prevent or limit the vesting of exclusive rights only when required by the occurrence of events that were not foreseeable at the time of contracting.

Thus, the scope of the Government's inquiry at the time of an invention's disclosure should be quite limited. The agency's review should focus on those unforeseen circumstances of which it has become aware since the time of contracting that now require it to deny the contractor's exclusive rights request in any designated field of use.

For this reason, the possibility of such an inquiry should not significantly affect the incentives of sophisticated contractors that are considering participation in a funded project. In addition, the limited scope of the Government's right will also assure that undue administrative burdens are not imposed on the contracting agencies.

I think it merits our special mention that neither the administration's proposal nor H.R. 5715 prohibits contractors from receiving exclusive rights in funded inventions which in fact would be adequately commercialized even in the absence of such rights. As a result, some supracompetitive profits may be available to contractors which in hindsight would not necessarily call for the required commercialization investments.

The administration's proposal is premissed on the view that such a result is acceptable as a tradeoff for assuring the maximum commercialization rate of funded inventions and the efficient administration of the Government's research and development programs.

Unlike H.R. 5715, the administration's proposal would enable the government to prevent contractors from receiving exclusive rights in inventions when such acquisitions would anticompetitively enhance the recipient's market power. The administration's bill provides that the contractors receipt of exclusive license shall be deemed an acquisition of assets that is subject to scrutiny under the antitrust laws as if the contractor had acquired the patent rights in a transaction with another corporation. Thus, the agency may terminate or prevent the initial acquisition of a contractor's exclusive rights if a contractor's receipt of those rights has tended or would tend to lessen competition substantially or to create a monopoly in the antitrust sense.

Under H.R. 5715 the Government, of course, could not intervene to prevent or correct such an anticompetitive situation.

Dr. Baruch and the chairman have previously noted the provisions of the bill in connection with small businesses, and nonprofit institutions. I believe I should also note that both the administration's bill and H.R. 5715 also specify the manner in which rights will be allocated in inventions made by Government employees.

I would like to conclude, Mr. Chairman, by saying that the Department of Justice fully and strongly supports the administration's proposal as being a reasonable means by which we can accommodate some partially inconsistent goals and make the work of both the Government and the private sector in conjunction with

Government sponsored and encouraged research and development bear the best fruits for the general welfare of this country.

We strongly support the administration's proposal. I would be delighted to answer any questions I can from the members of the subcommittee.

Thank you.

[The prepared statement of Mr. Ewing follows:]

Department of Justice

Testimony of

KY P. EWING, JR.
Deputy Assistant Attorney General
Antitrust Division

Before the

Subcommittee on Science, Research and Technology
Committee on Science and Technology
United States House of Representatives

Concerning

Government Patent Policy

February 8, 1980

Mr. Chairman and Members of the Subcommittee:

I appreciate the opportunity to testify today on behalf of the Department of Justice in support of the Administration's proposed "Government Patent Policy Act of 1980." I will also comment on H.R. 5715. Both the Administration's bill and H.R. 5715 establish frameworks for allocating rights in patentable inventions resulting from federally sponsored or supported research and development activities. Both bills recognize the need for greater uniformity among federal agencies in the allocation of rights in funded inventions and for a more prominent position for the private sector in the commercial development of those inventions.

The Department of Justice and many others believe that government patent policy legislation is necessary not only to increase competition for government research and development contracts and to stimulate recipients of government research and development assistance but also to improve the prospects for innovation nationally. The successful accomplishment of these goals will provide the American economy with tangible benefits, including: additional competition in foreign and domestic markets; new and improved products; more jobs; a better competitive posture internationally; and a reduction in the public and private costs of the government's research programs.

The Department's interest in government patent policy legislation flows principally from our antitrust enforcement mission to make competition work in our economy. Innovation is as vital an element in the competitive process as the competitive process is in the success of this Nation's economy. Measures which will encourage greater innovation, such as the proposed Administration bill, will benefit consumers by creating additional competition in the introduction of new products and services.

Traditionally, the government has sought to encourage innovation in many ways; among them are the patent system and the sponsoring and supporting of research and development. The patent system tends to encourage investment in long-range, high-risk research and development projects by providing a limited and temporary respite from imitative competition while the innovator seeks to recover its innovation investment in the marketplace. However, the availability of such protection does not always provide an adequate incentive to engage in particularly expensive and long-range research and development endeavors. This is especially true where imperfections in the market make it impossible for the potential innovator to capture a sufficient return for its innovative efforts to justify the required investment. In such cases, the federal government improves upon the incentive structure by supporting all or part of the initial research effort.

Since World War II the government's participation in research and development activities has increased substantially, so that it now sponsors or supports nearly one-half of the total national total effort annually.

Patentable inventions frequently arise out of such government research and development activities. As one might expect merely from the nature of the endeavors that the government funds, the vast majority of these inventions are not suitable for private commercial exploitation but, instead, are valuable only to the extent that they have contributed generally to the technology base of a particular industry or sector of the economy. Periodically, however, research does produce patentable inventions that have potential commercial value. It is a deep concern over the most efficient and equitable means for assuring the commercial exploitation of these inventions that brings us together today.

Although this concern may be the paramount catalyst for our current efforts, it is important to realize that there are other concerns in this area that must be adequately and credibly addressed. Our government patent policy should harmonize at least five partially inconsistent goals. First, it should have built-in mechanisms that permit the government

to protect adequately the public's equitable interest in inventions resulting from federal funding. Second, it should encourage private contractors to exert their best efforts as well as encourage their widest possible participation in government-sponsored research and development programs. Third, it should assure that inventions resulting from government funding will be fully disclosed to the responsible agency. Fourth, it should induce the commercialization, under the most competitive circumstances possible, of any economically-valuable inventions resulting from federal funding. Finally, the policy should eliminate any unnecessary adminstrative costs incurred by the government or its contractors as a consequence of a federal agency's management of patent rights.

Presently, these goals are being accommodated in a number of different ways, and no comprehensive legislation controls the disposition of rights to inventions made by government contractors. Congress has acted in some instances with respect to particular agencies or subject matter. Such legislation generally provides that title to inventions resulting from the covered research and development normally will be retained by the government; none of the statutes provides that title should be given directly to the contractor. Nevertheless, some of the statutes permit the contracting agency to waive the government's title in an invention after

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it evaluates several factors, such as the invention's importance to the public health, welfare, and safety and the effect of the waiver on promoting the invention's commercialization. Such provisions are contained in the Federal Nonnuclear Energy Research and Development Act of 1974. 1/

In the absence of specific statutory authority, agencies allocate rights in inventions made by government contractors pursuant to guidelines contained in the 1971 Presidential Statement of Government Patent Policy. 2/ The Presidential Statement, which is implemented by the regulations of the various agencies, generally provides a very flexible framework within which rights to inventions resulting from federal funding may be allocated. The statement describes in general terms those conditions under which the government will take title to an invention and those conditions under which the contractor may acquire title.

As a consequence of the array of various statutes and regulatory authorities directing the allocation of patent rights in inventions made by government contractors, the agencies have adopted a wide variety of non-uniform and sometimes conflicting policies governing the disposition of such

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1/ 42 U.S.C. §§ 5908-5909.

2/ 36 Fed. Reg. 16887 (1971). This 1971 statement is a slightly modified version of the 1963 Statement of Government Patent Policy issued by President Kennedy. 28 Fed. Reg. 10943 (1963).

rights. Some agencies grant title in inventions to the contractor in a majority of instances; others generally retain title for the government. Unless prohibited by statute, nearly all agencies waive title to the contractor under certain circumstances. Moreover, some agencies that are subject to more than one statutory or regulatory scheme have adopted patent rights allocation policies that vary according to the particular research and development program in which the contractor is participating.

This lack of uniformity has created confusion among contractors who perform research and development activities for several agencies or programs. As President Carter recognized in his Industrial Innovation Message to the Congress of October 31, 1979:

> For over thirty years the Federal agencies supporting research and development in industries and universities have had conflicting policies governing the disposition of pertinent rights resulting from that work. This confusion has seriously inhibited the use of those patents in industry.

The Administration's bill, which embodies the President's proposal for a uniform government patent allocation system, and H.R. 5715 would replace the numerous conflicting patent allocation policies presently in force with a single, uniform government patent policy.

The Administration's bill generally provides for the government to take title to inventions resulting from federal funding. However, contractors would receive exclusive licenses in fields of use that they specify, and in which they agree to commercialize the inventions, so long as the receipt of those rights is not inconsistent with the public's interest in those inventions. The government retains the right to license the invention or otherwise make it available to the public in fields of use not selected by the contractor. In addition, the government receives a royalty-free, nonexclusive right to practice the invention. "March-in rights" are granted and can be exercised when necessary to commercialize the invention, to protect the national security, to meet requirements for public use specified by government regulation, and to correct situations inconsistent with the antitrust laws.

The bias of the Administration's bill toward the granting of exclusive rights to contractors is intended to promote the commercialization of funded inventions, to increase contractors' incentives to disclose fully the results of funded research, to reduce the agencies' administrative costs in making determinations on allocation of patent rights, and to increase competition for government sponsored research and development projects. Agency experience indicates that most commercially valuable inventions arising out of government

sponsored or supported research and development require substantial developmental expenditures before they can be brought to the market. Consequently, exclusive rights in these inventions are most often necessary to provide contractors with sufficient incentives to make commercialization investments. Moreover, it is costly and difficult for an agency to differentiate between those funded inventions which would be commercialized without exclusive rights and those which would not. Therefore, it is appropriate to favor granting contractors exclusive rights with some limitations. Such a "bias" in the process should help to maximize the commercialization rate for funded inventions and, thereby, assure that the public at least has access to the benefits of all commercially valuable inventions brought forth through the use of taxpayers' funds.

H.R. 5715 would seek to accommodate the policy goals I described earlier by granting contractors title to funded inventions and reserving a royalty-free, nonexclusive license for the government to practice the invention. It relies on "march-in" rights to alleviate any conflicts between the contractor's possession of title and the public interest, and to achieve any commercial application of the invention that could not be accomplished by the contractor. In addition, that bill would permit the government during the contracting

process to acquire title to forthcoming inventions in order to protect the national security, to protect the public health, safety, and welfare, to develop products that will be required for use by government regulations, and to accomplish particular agency objectives.

The most important policy differences between the contractor-title approach embodied in H.R. 5715 and the Administration's proposal is that only the latter provides the government with the opportunity, after an invention has been disclosed but before exclusive rights are vested in the contractor, to determine whether the contractor's receipt of such rights is consistent with the public's interest in the invention. The opportunity to make such a determination after the contours of the invention have been revealed to the government should be an essential feature of any government patent policy legislation. If, at the time the invention is disclosed, the agency can conclude that the contractor's acquisition of exclusive rights would be contrary to the agency's mission, would be detrimental to the national security, or would result in substantial competitive harm, it is essential that the government be able to prevent or otherwise limit the contractor's receipt of those rights.

In order to comprehend the potential impact on the federal contracting process of the government's right to conduct inquiries into identified inventions, it is important

to view this right in the context of the options established by the Administration's bill. Under the Administration's proposal, an agency may, at the time of contracting, deviate from the patent rights allocation system provided in the bill so long as such deviations are made in furtherance of the agency's mission and the public interest. A deviation may permit the contractor to acquire more or fewer rights in inventions than it would normally receive. The intent in providing this deviation authority is to encourage the agencies to inform contractors at the outset of the contracting process that forthcoming invention rights will not be allocated in conformance with the provisions of the bill.

Because this deviation authority would exist under the Administration's proposal at the contracting stage, it is anticipated that agencies will intervene at the postdisclosure stage to prevent or limit the vesting of exclusive rights only when required by the occurrence of events that were not foreseeable at the time of contracting. Thus, the scope of the government's inquiry at the time of an invention's disclosure should be quite limited. The agency's review should focus on those unforeseen circumstances of which it has become aware since the time of contracting that now require it to deny the contractor's exclusive rights request in any designated field of use. For this reason, the possibility of such an inquiry should not significantly affect

the incentives of sophisticated contractors that are considering participation in a funded project. In addition, the limited scope of the government's right will also assure that undue administrative burdens are not imposed on the contracting agencies.

Neither the Administration's proposal nor H.R. 5715 prohibits contractors from receiving exclusive rights in funded inventions which would be adequately commercialized even in the absence of such rights. As a result, some supra-competitive profits may be available to contractors which, in hindsight, were not necessary to call forth the required commercialization investments. The Administration's proposal is premised on the view that such a result is acceptable as a trade-off for assuring the maximum commercialization rate of funded inventions and the efficient administration of the government's research and development programs. However, unlike H.R. 5715, the Administration's proposal would enable the government to prevent contractors from receiving exclusive rights in inventions when such acquisitions would anti-competitively enhance the recipient's market power. The Administration's bill provides that the contractor's receipt of an exclusive license shall be deemed an acquisition of assets that is subject to scrutiny under the antitrust laws, as if the contractor had acquired the patent rights in a

terminate, or prevent the initial acquisition of, a contractor's exclusive rights if the contractor's receipt of those rights has tended, or would tend, to lessen competition substantially or to create a monopoly in the antitrust sense. Under H.R. 5715, however, the government could not intervene to prevent or correct such an anticompetitive situation. Rather, under that bill, after title in a funded invention had vested in the contractor, the government could only address uses of the contractor's exclusive rights which violate the antitrust laws.

In addition, the Administration's bill and H.R. 5715 both provide small businesses and nonprofit organizations with title in inventions resulting from federal funding. Small businesses and nonprofit organizations have been excluded from the field of use provisions in the Administration's bill in recognition of their special place and function in our society. The flexible operations of small businesses and nonprofit organizations already provide those entities with strong incentives to promote an invention's commercialization to the widest possible extent. We expect that the government's efforts both to license inventions made by government employees and to license contractor inventions in those fields of use not selected by larger contractors will be replicated by small businesses and nonprofit organizations with respect to the inventions resulting from

federal funding in which they receive title.

The Administration's bill and H.R. 5715 also specify the manner in which rights will be allocated in inventions made by government employees. Both bills would resolve this question by codifying the basic policy concepts of Executive Order 10096, 3/ which then would be uniformly applicable to all federal employees. Except for the use of "plain English" in the Administration's bill, which the Department of Justice believes to have contributed significantly to the clarity of the complicated matter encompassed by the entire bill, and some minor differences, the provisions in the two bills concerning allocation of rights in inventions made by federal employees are substantively similar.

Mr. Chairman, this concludes my prepared statement. I would be happy to answer any questions the Subcommittee may have.

3/ 15 Fed. Reg. 389 (1950), as amended by Executive Order 10930, 26 Fed. Reg. 2583 (1961).

Mr. ERTEL. Thank you, Mr. Ewing, for your concise statement. I am not really the author of H.R. 5715, because I took a lot of other people's thoughts and just put them together in one piece of paper, so I guess I cannot claim pride of authorship. I am quite willing to have it scrutinized. I wonder if you have looked at the section on page 11 of H.R. 5715 where you made your comments. Section (c) provides that:

> Federal agencies shall have the right to require the contractor to grant a nonexclusive, partially exclusive, or exclusive license to responsible applicant or applicants upon terms reasonable under the circumstances or if the contractor refuses to grant such a license itself, if the agency determines in accordance with subsection (c) that such action is necessary.

Then I jump to (iii):

> because the actions of the contractor beyond the exercise of exclusive rights in the invention have tended substantially to lessen competition or to result in undue market concentrations in any line of commerce to which the technology relates or to create or maintain other situations inconsistent with the antitrust laws.

Does that not then give the Government the right and the ability to make sure that there is competitiveness and to prevent undue market concentration?

Mr. EWING. Yes, sir, it does, at a particular stage. The Department of Justice is very much in favor of such language. The contrast I was attempting to draw—and perhaps I did not do it adequately—between H.R. 5715 and the administration's proposal was that the administration's proposal allows that analysis to be made at the time of disclosure of the invention, and prior to the vesting of the exclusive rights—at a kind of incipiency stage.

If at this point in time a responsible Government official can clearly see that letting the rights vest in the contractor would create this situation, then he may act at that time to prevent it.

In contrast, as we understand the way H.R. 5715 would operate, H.R. 5715 would require that the contractor obtain the title and that an anticompetitive situation actually appear in the field, as it were, requiring at that point proof to take title away from the contractor. This contrasts with the other mechanism, which we think is more desirable, of having a responsible official at an earlier stage, on the basis of an incipiency kind of standard, take a look at the questions inherent in any kind of a situation inconsistent with the antitrust laws. It is a question of when the mechanism is applied, sir.

Mr. ERTEL. If I might—I don't want to be argumentative. I just disagree with you.

Mr. EWING. Perhaps I don't understand H.R. 5715. I don't mean to be argumentative at all, either.

Mr. ERTEL. Section 313, which that falls under, says, "Each Federal agency shall acquire on behalf of the Federal Government at the time of entering into a contract title to any invention made under the contract of a Federal agency if the agency determines * * *"

Then section (b), "In other situations not covered by section 313(a) each Federal agency shall acquire on behalf of the Federal Government at the time of contracting * * *" and goes on. So it seems to me that is at the time of contract.

Mr. EWING. That is the contrast, sir. At the time of contracting we don't know what the invention is almost by definition we don't

know it. Consequently, what we are proposing—and that is the difference—is that the antitrust analysis be done immediately after disclosure of the invention and before exclusive rights vest.

Let me identify some different stages. Let us call time of contracting point A. Then invention occurs. There is the disclosure of the invention to the Government, which we can call point B. Then there is the vesting. Finally, you could have a point C down the way at which there could be anticompetitive effects in the field.

We are suggesting that the important time to focus on this issue of an exclusive right's effects on competition is point B—when the Government has had disclosed to it what the invention in fact is. That is the difference between the bills.

I want to say that I heartily agree with you that this kind of look should be taken, so that the major difference here is a question of precisely when.

Mr. ERTEL. Again, I must say I differ with your interpretation of the bill. I come back to the other sections. I really feel it is not worth arguing about here. We are going to have a legal problem. We will sit down and discuss that in private.

Mr. EWING. We would be delighted to, sir.

Mr. ERTEL. I just don't agree with your interpretation. I don't think you have read the bill in its entirety and the sections as they relate to each other. That is just my view. Maybe you can point out that I am wrong.

That is easily enough done, I suppose, because I happen to believe that we shouldn't have anticompetitive situations. But one thing we have to recognize, that any patent developed in the private sector is anticompetitive. By definition, it is a monopoly.

Mr. EWING. Mr. Chairman, I would respectfully say that those words would have been applauded by many of my predecessors, and, indeed, there is one footnote by the Supreme Court that suggests that.

In one sense, of course, you are right, it is a monopoly. But it is a monopoly only in the sense that it is a right to exclude others from the use of the invention for a temporary period. It doesn't necessarily give you any actual market power.

There are plenty of patents with fancy blue seals and ribbons that produce in the inventor no market power whatsoever. Thus, we have to be careful to distinguish the so-called patent monopoly from monopoly power in an antitrust sense.

Mr. ERTEL. Even if a firm has monopoly power it may not be able to exercise it because it doesn't have the money, but that is a practical consequence.

I may have a monopoly on making a widget, which is no good at all. So it doesn't make a bit of difference. You can throw the patent out. Why do I get the patent in the first place. But the point is one assumes you have the power, and then you have to exercise it. I might have the power to punch you in the nose, but I don't do it.

Dr. BARUCH. Mr. Chairman, may I make a comment on the procompetitive aspect of the patents?

Mr. ERTEL. Certainly.

Dr. BARUCH. One of the common reactions to patents is that since they grant a monopoly they tend to lessen competition. I

would like to point out that most frequently exactly the contrary is the case.

The granting of a patent monopoly is a way of giving to firms that do not have other means of monopolizing the market or securing the favorable position in the market through their advertising power, their marketing power, their productive capacity, a way of increasing their competitive edge with those firms.

So while the monopoly granted by a patent is temporary and restricted, it is also and has demonstrated itself to be one of the most procompetitive kinds of tools that the Federal Government has.

Mr. ERTEL. I think you might add a caveat. One can say if you get a patent which is in a field which threatens others, they will tend to experiment in that field and try to get at the patent, get an improvement patent.

They will try blocking patents. They will try to protect their competitive position. So, in some instances a patent does in fact increase the competition in the market.

Dr. BARUCH. Not only that, but it permits the smaller company to compete effectively with the larger company.

Mr. ERTEL. So, I guess we are in agreement on many of the things we are saying, but we are just not in agreement, at least Mr. Ewing and I are not in agreement on the interpretation of H.R. 5715.

Mr. HERZ. I think the point is not that H.R. 5715 would not allow exactly the kind of focus that the administration's bill would allow at what Ky called point B. It would allow it.

The difference, as I see it is that the administration's bill almost forces that focus. It prescribes a point B procedure which is otherwise not there.

There is a very small window of 90 days after the complete technical information is in on the invention in which the agency has an opportunity to take a second look.

You could accomplish the same thing using the march-in rights which are really intended for point C—after the invention has already been patented and licensed. But there is a difference in focus.

Mr. ERTEL. I guess that brings me to one of my criticisms or concerns about the administration bill. Let's assume for a moment a contractor has put in a substantial amount of money and he sees ahead of time—the second look you are talking about.

He knows full well that if they put the money in, they can make a contract. Then they know that they apply for an exclusive field initiative. Then the Government is going to come back in 90 days after they invent something, which may be a major innovation.

And they say based upon an assumed set of facts, without any proof, we can deny you an exclusive field of use, without any proof that it actually does that. Then what are the standards that are going to be applied? It says "substantial lessening," I guess.

This is a very flexible word. So they are at the mercy basically of the Government interpretation of that word. Are they going to do it? Are we going to in fact inhibit people, and we want contractors, are we going to start inhibiting contracts because of that, that second look, because they are subject to the whim?

Mr. HERZ. I don't think so. The only concern I have heard expressed by people who have had an opportunity to look into this is that the second look would discourage people from contracting with the Government—which I don't think is really the case, for the reasons that Ky already has given.

At the time of the second look the invention has just been made and identified. The contractor has not made the extensive investment in development and production and marketing that it may later make.

So, I think there is no threat that you won't get commercialization because of the second look. The second look is over before the commercialization effort gets underway.

Moreover, there is a de novo review in this bill of any exercises of the second look rights by the Government, or of the march-in, by the Court of Claims

Mr. ERTEL. May I just at this point interject. I think I was referring, first that the contractor would, because of the second look possibility, possibly refrain from contracting with the Government. I think that was my initial point.

Second, what is the time delay. Let's assume for a moment that the Government comes in and says we are going to take this away. They make a decision. What is the time frame.

Then they go through a hearing de novo. They say we are going to take away your exclusive rights. We go to the Court of Claims. I assume there is an appeal from the Court of Claims, abuse of discretion, all those things.

What will be the delay in time if we go through that entire process? In my limited experience in this, some patent litigation, which this would be equivalent of, 10 years is not unreasonable and 20 is probably in major complicated litigation, probably more the rule.

Mr. EWING. Mr. Chairman, may I speak to that?

I think what we are talking about here is a focus—at what I have called point B, after the disclosure of the invention—on the competitive effects of the future use of the invention in a field by a particular contractor.

Now, at that point the issue becomes whether the contractor's acquisition of exclusive rights on the invention would substantially lessen competition in any area of the country. That is an issue confronted by our courts monthly in merger cases.

Merger cases in the antitrust area are traditionally very fast moving. Decisions are made, in essence, on preliminary injunctions by judges. Very few of them drag on into lengthy cases.

Unlike monopolization cases, with which this Congress and our Division is familiar, merger cases tend to be very swiftly decided. So, I honestly believe that under the administration's bill you will find the antitrust legal issues to be fairly sharp, and the kind of factual underpinings for those legal determinations to be fairly clear, both to contractors, certainly the large contractors, and to the Government.

If we use that second look to determine the competitive effects, I don't think you will find it will require a very lengthy process, either from the agency or, if there is still a disagreement, the

Court of Claims, where a de novo review would be afforded the contractor.

Mr. ERTEL. Dr. Baruch, you were giving the analogy to unemployment compensation, which I thought might be strained. I think there might be some straining here when you talk about anticompetitive effects, between a merger situation. You know you have a track record showing what those people have done. You have a definitive idea of the fields that they have in fact utilized their ability to go into.

Here you are talking about something speculative, something that is a possibility, a realm of possibility. You don't know, for instance, exactly how that is going to be utilized because we haven't gotten the inventions to commercialization at this point.

So how do you make that analogy. You have a lot more factual situations. That is the same thing as a patent claim. What does the patent claim cover?

Mr. EWING. You and I are in agreement on this point: given the nature of the beast, at the time of an invention's disclosure, it is going to be a rare instance in which the Government official is going to be able to say: "I can already determine on an incipiency basis that this is going to produce a situation inconsistent with the antitrust laws." It is going to be a rare case.

Mr. ERTEL. I believe what we ought to do is see what happens and then go back and have the facts and then decide.

Dr. BARUCH. That is true, but we have tried to point out that not only must they decide it at that time, but that it is decided on the basis of new information that wasn't available at the time of contracting.

So you have got a double unlikelihood, if you will, because there must be new information that arose between the time of contracting and the time of invention.

We see the second look as being an extremely rarely used device, but which is necessary for the safeguarding of the public interest.

Mr. ERTEL. Mr. Brown?

Mr. BROWN. I just have a couple of brief questions, Mr. Ewing. Are we going to have any problem with this distinction between the large and small business as contained in the bill, the different treatment, specifically through using the SBA definition.

Does this cover the problem that might arise from, we will say, a business which meets the Small Business Administration definition of a small business, but which is in fact a creature of a larger business? Is that adequately covered in the legislation?

Mr. EWING. I think necessarily we are drawing lines here and there will be hard cases on either side of the line.

The best line that collectively we in the Government could find to draw was the SBA line, which has been previously known to industry and the Congress. That was the line we chose.

I could not in honesty say there will be no difficulties. I am certain that companies right at the verge will have some difficulties from time to time, but if you are going to draw a line at all, then this seems to us a reasonable one to draw.

For the reasons Dr. Baruch has previously mentioned, it was determined that small businesses and nonprofit institutions simply enjoy a different place in our society and thus are afforded, if you

will, a little less paperwork under the administration's bill than are the larger corporations.

Mr. BROWN. I think I can agree with the rationality of drawing the line somewhere in a reasonably well understood place.

I am still not clear, mainly because of ignorance, whether the definition of a small business would exclude a research foundation, we will say, that was of a size to qualify but was, say, 51 percent owned by a large corporation and won't qualify.

Mr. EWING. I have been informed that the regulations of the Small Business Administration prevent a business from qualifying as a small business if it is affiliated with a very large company. I think that probably takes care of the problem. I am sure it has arisen before.

Mr. BROWN. All right. Let me just ask you one other question. You, as did Dr. Baruch, set forth the positive goals which the legislation would accomplish—increasing competition, R. & D. contracts, stimulate innovation, provide for improvements in our international balance of payments and so forth.

Do you think it is reasonable to include within this legislation a mechanism whereby we might, say, ask Dr. Baruch or whoever is in his position 5 years after the bill is enacted, to report to Congress whether in fact these goals were achieved, and an analysis of either why they were or were not, as a means of evaluating the soundness of our judgment in enacting this new structure.

Mr. EWING. I obviously cannot speak for the administration here on that point. I can give you my personal views. I think it certainly would not be a bad idea to have mechanism for a report outside the normal oversight means of the committee—a report on how this is worked out after a period of years.

My own personal sense of it is that a report in much less than a decade would not give us time adequately to understand the workings of this bill. After all, the debate in which we are engaged has been going on for well over 30 years.

Mr. BROWN. Selecting the proper time frame to make a reasonable evaluation would be important. Five to ten years you think?

Mr. EWING. I think something in the neighborhood of 10 years would be appropriate. From the point of view of the Department of Justice we would certainly have no difficulty in agreeing to a provision in the bill that would create a special study group to report to the Congress and the executive agencies at that time.

Mr. BROWN. Well, I recognize that there would be opportunities to do that without anything being done in the bill. If it is a gross failure, we are going to come back and look at it and say why was it a gross failure.

My feeling is putting a statement that we intend to do that in the bill. It will encourage the development of indicators, of other ways of measuring this, which we may not have at the present time, and allow us to do it with foresight and with better tools. That is what I am concerned that we need to do.

Mr. EWING. That is certainly a very valid point of view. As I mentioned, we in the Antitrust Division ourselves determined that we had better reexamine of our own positions on Government patent policy. I think periodically we all ought to do that.

Dr. BARUCH. I think the specific suggestion you made, assigning to the Secretary of Commerce the submission of a report to the Congress stating the performance under this bill, and comparing it with other measures of performance of the patented inventions would be entirely appropriate.

I would certainly not be disturbed by having that responsibility put on me if I were in that position.

Mr. BROWN. The disturbing thing, however, Dr. Baruch, is that the bill might really be a very good bill. It might work very well; that is, it might be a substantial improvement. But our overall situation might continue to deteriorate because of factors beyond the purview of the bill.

Dr. BARUCH. One could compare, for example, the performance of the Government licensing these patents compared to similar patents licensed by research institutions or similar patents licensed by individual companies.

Mr. BROWN. We would need a range of measures in order to evaluate this. This is precisely what I would like to get at. Having us think through in advance a range of measures to allow us to make policy judgments.

Dr. BARUCH. I would worry a bit about trying to embody in legislation a range of measures rather than assigning the task of developing the report and using the best knowledge available to some agency and letting them not only present the results, but the range of measures they used and why they used them.

Mr. EWING. Mr. Brown, may I interrupt with one other thought? Taking Dr. Baruch's idea of centering the authority in the Secretary of Commerce is a good one. I would suggest, however, that because we are dealing here not only with issues that are of concern to the Commerce Department, but also to the National Science Foundation and to the Justice Department, if you are going to spell it out in the act, you might give us—the Attorney General and the National Science Foundation—a statutory basis for a role in this report.

Mr. BROWN. As a practical matter I talk to the Science Foundation frequently about the importance of developing this kind of a role, which I have never been too successful in convincing them of. Do you wish to comment, Mr. Herz?

Mr. HERZ. I would just note we are here today, Mr. Brown.

Mr. ERTEL. Mr. Ewing, I read your testimony today for the first time. I really have not read it thoroughly. I apologize for that. I guess it didn't get here until 6:30 last night.

I appreciate the fact that you were out of the country. Things just didn't work right.

Mr. EWING. Including the cab to get here this morning.

Mr. ERTEL. You have on page 12—what happens is I think things tend to have a life of their own once they get into writing. If they stay in that form, and they are incorrect, they still continue. People start citing them.

It says under H.R. 5715, however, "* * * the Government could not intervene to prevent or correct such an anticompetitive situation. Rather under that bill after title in a funded invention had vested in the contractor, the Government could only address uses

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of the contractor's exclusive rights which violate the antitrust laws."

I don't think that is correct in a reading of the bill.

Mr. EWING. I stand corrected, for under H.R. 5715 the Government could intervene to correct an anticompetitive situation arising for use of the invention.

Mr. ERTEL. OK. Just so we have that corrected. I haven't read the rest of it. I think there are some other statements similar to that throughout your testimony. I just want to make sure for the record when we came back to review it——

Mr. EWING. Sir, may I just add clearly you are correct. My statement as written is incorrect. I think that if it is possible to work with you and your staff after this hearing, perhaps I can do a better job of making clear what I do still perceive to be the difference in this regard between the administration's proposal and yours. It is the difference between the standard requiring actual anticompetitive effects from use of the invention and an incipiency antitrust standard based on acquisition of exclusive rights.

Mr. ERTEL. We will submit written questions to you. You can respond to those, so we get the differences. I would like to make sure we are clear on what the differences are, and not get some issues that don't belong here.

Mr. EWING. I concur in that. I am delighted we are in such firm agreement on so much of this.

Mr. ERTEL. I think we will continue with Mr. Herz after that comment.

Mr. HERZ. I am not sure I am going to say much very different, Mr. Chairman.

My colleagues have described the proposed Government Patent Policy Act that the administration has drafted for consideration by the Congress. The National Science Foundation has been actively involved—along with the Department of Commerce, the Justice Department, and many other agencies—in developing and drafting that proposal. The Foundation actively supports it, for three principal reasons:

First, the Foundation is a research-support agency, with most of the research we support performed by universities and small businesses. The NSF, therefore, shares with other research-support agencies a concern for the effect of Government patent policy on research performers and has a special concern for its effect on universities and small businesses. The President's proposal would be a major plus for them.

Second, the Foundation has a special interest, reflecting the President's personal interest, in drafting legislation and regulations so that they are as clear and comprehensible as the subject and the substance permit.

In drafting the President's proposal, the administration has tried very hard to develop a logical and comprehensible structure and to use plain English. We believe the resulting difference is more than cosmetic.

Third, and most important, the Foundation is the agency within the Government whose special responsibility is for science and the dissemination and use of science for the benefit of the public.

I do think, Mr. Brown, it is with that responsibility in mind that we are here today.

Mr. BROWN. May I just elaborate on that point. It is dissemination of science for the benefit and use of the public, and also to enhance the understanding of the public of the importance of science so they will support science more effectively.

Mr. HERZ. We fully understand, Mr. Brown. I think you and this committee have been very effective and useful to the National Science Foundation in making that point.

Mr. BROWN. I sometimes get the feeling the Foundation thinks I am trying to get across the idea that science is so crass that it has to have a practical benefit to the public in every case.

Mr. HERZ. I have understood very clearly from the start that is not what you were saying, and I think what you are saying is an important message for us.

Mr. BROWN. Thank you.

Mr. HERZ. The President's proposal would do much to spur innovation and bring the fruits of Government-supported science to the public. That is the major reason we are actively supporting this bill.

Mr. Chairman, I expanded on each of these three points in testimony 2 weeks ago before the two Senate committees interested in this issue. Rather than repeat myself on all of them here, I should like to submit a copy of my statement there for inclusion in the record.

Mr. ERTEL. Without objection.

Mr. HERZ. Today I would like to stress three additional points:

First, the President's proposal has the same primary objective and embodies almost the same approach to that objective as other proposals pending before the Congress.

Second, the emergence of that much consensus, and indeed the achievement of an administration consensus on a bill with that primary objective and that basic approach offers the best opportunity ever for enactment of high quality, comprehensive legislation on Government patent policy.

Third, the President's proposal has several valuable features that deserve your special attention as we work toward such a bill.

Let me talk first about the common objective and approach of pending proposals. As you know, the President's bill comes to a Congress that already has before it other bills on Government patent policy. There are some differences among these bills, but most striking is what they have in common.

They all have the same primary objective: To stimulate commercial development and public use of inventions that result from research sponsored or supported by the Government. They all preserve for such inventions the exclusivity provided by the U.S. patent system for inventions generally.

They all do so for the same reason: To give incentive and investment protection to those who will bear the costs and risks of development, production, and marketing that someone must bear if inventions are to become useful innovations.

Moreover, they all employ the same basic approach: Allocation of principal rights to the contractor. The President's proposal differs from the other pending bills only in preserving a licensing role for

the Government in markets—or, in the jargon of the patent business, fields of use—where the contractor has no deep or immediate interest.

This commonality of objective and approach seem to me a remarkable development.

Government patent policy is a topsy-turvy world where what seems most plausible, or even obvious, to a fairminded citizen who comes new to the subject turns out after deeper consideration and experience to be least workable and least effective. This is one of the points expanded on at some length in the statement I provided to the Senate.

As you know better than I, it is not easy to work such an issue through a diffuse political system where many of those who have important roles have little time to examine any but the most major issues in depth. Thus, such an issue—and this issue in particular—tests our ability to govern effectively in a complex system of representative democracy such as we have in the United States and value so highly.

In this context, the success the Carter administration has had, after many previous efforts had failed, in producing a bill representing a consensus on the primary objective and the basic approach I have described is a very encouraging development. It certainly should be seen as such by all those who understand the value and importance of that objective and that approach.

Now, with consensus hopefully emerging in the Congress as well on this long debated issue, the opportunity for enactment of high quality, comprehensive Government-patent policy legislation is the best we have ever had. To achieve that long sought and important end, we must reason together toward legislation that embodies the best thinking of all involved and that can be passed. For our part, the administration has no intention of being stubborn or prideful about our particular product.

Still, it took a long and painstaking effort to produce that product, in the course of which many points of view were heard and taken into account. The resulting product has, we think, distinctive virtues that deserve serious consideration by others as we proceed in the political process. Let me call out four that seem particularly important.

First, the President's bill makes a new and unique effort to address what has been the weakness of the basic approach that gives principal rights to the contractor. The contractor often has no deep interest, or no interest at all, in developing or licensing an invention outside its regular markets. The invention might nonetheless have substantial potential application in other markets if someone would be its champion there. Unless the contractor declares its willingness to make a serious licensing effort in such other markets or fields of use, therefore, this bill would give the Government sufficient rights and authority to let it be the champion there. Even if the Government only modestly succeeds in stimulating development of innovation where none would otherwise have occurred, the sum of what it achieves and what the contractor achieves will be more than either would have achieved alone.

Second, the President's bill takes particular care to respond to a historic concern about the basic approach that gives principal rights to the contractor: Possible harm to competition. I will not say more about that because you have heard from the expert.

I might just make a public remark outside of my prepared statement, Mr. Chairman. In the development of this bill, the Justice Department has certainly been tenacious in maintaining its views, and the bill being proposed bespeaks that tenaciousness. At the same time, if there is a more intelligent, openminded, high-class group of lawyers to work with in the Government than Ky Ewing and the people who worked with him on this bill, I haven't had the privilege of working with them. They made major contributions to the bill in a number of respects.

Mr. ERTEL. Would you like to defer to Mr. Ewing so that he can comment on your coment at this point?

Mr. BARUCH. To make that comment thoroughly shocking, may the Department of Commerce officials second it.

Mr. ERTEL. Gee, I have never seen such a unanimity among Government in my life.

Mr. HERZ. Mr. Chairman, I would just like to mention there is no political motivation behind that remark. It is not the kind of remark I often make. It was sincerely made.

Mr. ERTEL. We certainly appreciate that. I thought it was an appropriate point for a little levity, if possible.

Mr. HERZ. I understand. I didn't mean to suggest anything to the contrary.

The third point about the President's bill I would like to make is that it establishes what seems to me just the right degree of flexibility within a coherent, consistently administered policy. The "second look" provision in section 203 and the deviation and waiver provisions in section 207 are the keys here. Comprehensive standard Government patent policy legislation would take us out of an era when virtually every department and agency has, in practical effect, its own patent policy.

The flexibility allowed by the President's bill would not change that result. All that we in the agencies really need to achieve consistency is a clear policy decision that makes sense and freedom from the 20-odd different statutes that now lead us in 20-odd different directions. What we do not need is a straitjacket that would require us to subordinate agency missions and program objectives to rigid "uniformity" in this derivative aspect of our business or to ignore the special circumstances of particular cases.

We understand the concern of those who have been struggling with the present system, with the vagaries of agency policies that respond to shifting political signals in an area where there has been no political consensus. But this bill or another comprehensive bill along the same lines would establish a political consensus, backed by extensive legislative history, and give clear guidance to the agencies. We believe the agencies will respond responsibly. If experience should later demonstrate, as I think it will not, that more rigidity is necessary or desirable, it could be provided by regulations, by Executive order, or by legislation. In the meantime, agencies, programs, and constituencies will have time to adjust to the new circumstances, and any problems with agency discretion

will emerge with specificity and clarity. That will enable us to develop specific and clear remedies.

Fourth and finally, the President's bill employs plain English within a clear and logical structure.

I do not mean to claim that the act will be easy reading for someone new to the subject. This is, after all, a complex and technical area; patent law is almost a profession in itself. We cannot avoid using its specialized terms—"exclusive license," "field of use," "author's certificate," and so on. Nor can we avoid complex and technical provisions. Too many considerations must be accommodated within the rules established to permit simple solutions.

We can, however, avoid the whereases, thereupons, convoluted constructions, and half-page uninterrupted sentences that still, unfortunately, abound in Federal statutes and regulations. We can also structure the statute to make it as easy as possible to follow and understand and to highlight its principal provisions. Those things the administration has tried to do in drafting this legislation. I do not argue that we have succeeded completely, but I think we have succeeded substantially.

Mr. Chairman, I would like to talk to this subject a little further, not only because of its importance in this particular piece of legislation, but because I think it is of great importance in drafting legislation and regulations generally.

This plain English effort is not a minor virtue that has to do only with style and the surface of things. It is true that not far from the surface "plain English" drafting reduces the length of the legislation and makes it easier to understand. All those who have to work with the legislation, especially laymen and those new to the subject, but experienced practitioners too, will therefore be saved both effort and frustration.

A deeper contribution of "plain English" drafting is to the substantive formulation and subsequent operation of the statute. By making what is said plainer, it insures that those who are to implement or comply can easily understand what is expected of them. It also minimizes the unintended ambiguities that create disputes in the administration of the statute. It thus enhances the effectiveness of the law and the respect paid to both spirit and letter.

Most deeply, "plain English" highlights remaining flaws and issues that unfamiliar legalisms and convoluted structure would obscure. This is a vital, substantive service for drafters, legislators, and the public.

To us, indeed, eliminating obscurity would be one of the great virtues not only of the style in which the legislation is drafted, but of the legislation itself. Whether this bill, or another bill like it, can ultimately resolve all the issues in Government patent policy remains to be seen. But speedy enactment of such legislation will remove the thicket of laws, executive issuances, and regulations that now obscure this area. It will highlight the issues and allow us to move on to refinement of a coherent, comprehensive policy. It will also allow us to move on to related, probably more important, issues from which the tedious and seemingly endless debate on Government patent policy has been keeping us.

We hope such legislation will be enacted in this Congress. We are anxious to work with you toward that end.

[The prepared statement and a supplemental statement of Mr. Herzog follows:]

STATEMENT OF

CHARLES H. HERZ, GENERAL COUNSEL
NATIONAL SCIENCE FOUNDATION

BEFORE A JOINT HEARING OF

THE SENATE COMMITTEE ON COMMERCE, SCIENCE AND TRANSPORTATION
AND THE SENATE COMMITTEE ON THE JUDICIARY

January 25, 1980

The National Science Foundation wholeheartedly supports the proposed Government Patent Policy Act that has just been presented to you in draft. It deserves to be enacted in this Congress.

From our perspective at the National Science Foundation I would like to make three points about the proposed Act.

First, the Foundation is the agency within the Government whose special responsibility is for maintenance and stimulation of science and scientific research for the benefit of the public. Because of that responsibility the NSF has a deep interest in the working out of science for the use of the public. The proposed Patent Policy Act would do much to bring the fruits of science to the public.

Second, the Foundation is heavily in the research-support business, and most of the research we support is performed by universities and small businesses. The NSF therefore shares with other research-supporting agencies a concern for the impact of Government patent policy on research

performers and has a particular concern for its impact on universities and small businesses. The proposed Patent Policy Act would be a major plus for them.

Third, the Foundation has had a special interest, deriving in part from the President's personal interest, in drafting legislation and regulations so that they are as clear and comprehensible as the subject and the substance permit. In drafting the proposed Patent Policy Act the Administration has tried very hard to develop a logical and comprehensible structure and to use plain English. We believe the resulting difference is more than cosmetic, and I would like to say why.

Bringing the Fruits of Federal Research to the Public

The current state of Government patent policy reflects our historic difficulty in achieving consensus on the subject. The reason for that difficulty is not hard to find. Government patent policy is a topsy-turvy world where what seems most plausible, even obvious, to a sensible citizen coming to the subject afresh turns out after deeper consideration and experience to be least workable and least effective.

A common and quite reasonable first reaction is this: "The public paid for these inventions; why shouldn't the patents on them be freely available to all members of the public?"

As it turns out, however, if the patent is available to everyone, the invention is likely to be available to no one. Ordinary citizens, even ordinary businesses, can make no use of a patent as such. The invention must first be developed into a product or process and made available on the market before it does anyone much good.

The research that spawns an invention typically involves only a small fraction of the costs and the risks entailed in bringing it to market as a usable innovation. Most of the costs and the risks of development, production, and marketing remain to be borne by the developer. And those costs and risks are usually very considerable. As a result, only a small fraction of the patentable inventions that are made -- with or without Government support -- ever reach the public as usable innovations.

Fewer still would reach the public without patent protection. Without patent protection the firm that takes the costs and risks of initial development, production, and marketing would have no protection against other firms (particularly firms with dominant market positions) who might otherwise move in for a "free ride" by imitating the fully-developed invention and exploiting the

developed market. The narrow and temporary patent "monopoly" on the invention permits the firm that takes the costs and the risks a protected return on its investment and so provides incentive for it to take that entrepreneurial plunge.

Indeed, furnishing investment protection and an incentive for development after the invention is made may be the most important of the functions our patent system now serves.

Inventions made in the course of Government R&D contracts and grants are not different from other inventions in this regard. The cost of the research that led to the invention, all or part of which the Government has borne, typically is a small fraction of the costs that remain to bring the invention to market. Thus, the risks that remain -- that the invention will not pan out in development, that production costs will greatly exceed what is hoped for, and that the finished product or process will be rejected by the market -- are the really high-stakes risks.

And so the investment protection and incentive to innovation provided by the patent system are as vital for inventions initially conceived under Government R&D contracts and grants as for those initially conceived under purely private auspices.

But now we come to a second common reaction of a reasonable person coming new to the subject: "Granting that someone should have patent protection to bring an invention made with Government funds to the point where it will be useful to the public, why should the contractor have an inside track? Why shouldn't the Government license or auction the patent to any company willing to develop the invention?"

One answer is that the contractor very often has some equities in the matter, having contributed money, expertise, and other resources to the making of the invention and perhaps to some initial development. In such a case cutting the contractor out would not seem fair. But one could, of course, make an exception for such cases -- understanding that it would be a quite commonly used exception.

The more important answer is that at least in its own established markets, the contractor is usually a much better bet to successfully develop and market the invention than anyone else. The contractor is usually established and experienced in the technical field to which the invention pertains. It has the equipment, models, computer programs, and so on that were used in maturing the idea. It has any know-how surrounding the invention that has already been developed. Above all, it has the inventor as an employee.

Having the inventor is doubly important. The inventor is not only the one person in all the world who knows most about the invention and therefore is most qualified to carry forward its development. The inventor is also emotionally committed to his creation. A common theme found in research about progress in technology is that to become a successful innovation an invention needs a "champion" -- someone who believes in it deeply and will devote time and energy to making it work and getting resources devoted to it. In most success stories this champion, in the early stages at least, is the inventor.

In theory, of course, the Government could license someone other than the contractor and require by contract that the contractor make its employee-inventor and its invention-related know-how available to any such licensee. I think I need not belabor the practical difficulties and delays involved in trying to make such an arrangement work across institutional and geographic barriers, especially when neither the inventor nor the inventor's employer has any financial stake in further development.

For all these reasons and more it turns out that the most sensible policy, and the one most likely to bring the fruits of scientific research and technical development to public use, is one that allocates principal rights in the

invention to the contractor wherever the contractor is interested in developing or actively licensing the invention. That is the approach adopted by the Administration's proposed Patent Policy Act.

This Act would recognize, however, that the contractor often has no deep interest or no interest at all in developing or licensing inventions outside its regular markets. The inventions might nonetheless have substantial potential application in other markets if someone would "champion" them there. Unless a contractor is willing to make a serious licensing effort in such other markets or fields of use, therefore, the Government should be given sufficient rights to let it champion the invention there. Under the proposed Patent Policy Act the Government would retain rights in all fields of use where the contractor does not undertake to bring the invention to public use by either development or active licensing. We think this too will help bring the fruits of Government-sponsored science and technology to the public.

No previous proposal seems to us to combine so effectively the advantages of allocating principal rights to the contractor with the advantages of Government licensing to promote innovation.

Relieving the Burden on Research Performers

The present state of Government patent policy is, in my view, a briar patch for contractors and grantees. They must deal with twenty-plus different statutes and sets of regulations, all overlain by the President's Statement on Government Patent Policy, which has the effect of an Executive Order. Several of the statutes, though not ours, impose serious procedural and paperwork burdens that often result in months or, not uncommonly, years of delay. At least one proposal now pending would layer yet another statutory scheme, affecting only certain types of contractors, on top of the existing mess.

The proposed Patent Policy Act would cut through all this and replace it with a single statute covering all classes of contractors and grantees. It would be implemented by a single Government-wide set of regulations and a single Government-wide standard patent clause. Though agencies would retain reasonable flexibility to reflect the peculiar needs of their own programs or the special circumstances of individual cases, all would work from the same basic framework, instead of twenty-odd different ones.

Nor would the proposed Act impose any excessive administrative burden. Field-of-use designation, in particular, should be easy enough for contractors to handle. They know their own markets. When the time comes for field-of-use designation they will know the invention and have some idea of its possible uses as well. Moreover, this is not a matter the contractor has to debate with the agency. So long as it is prepared to commit to an effort to develop or license in any field of use, its designation of that field will not be questioned -- unless, of course, it is later shown to have done nothing to commercialize in a field where other firms would like to try.

From the standpoint of the universities and small businesses who are the Foundation's principal performers, the proposed Patent Policy Act is particularly favorable. Indeed, it is essentially similar to S. 414, which has been favorably reported from the Judiciary Committee. The virtues of the approach adopted were well developed in hearings there. The only departures are in drafting style and in the elimination of a few minor restrictions on nonprofit and small-business contractors, restrictions the Administration considers unnecessary and undesirable. The major difference, of course, is that this legislation would not deal with the problem only for nonprofit and small-business contractors, the tip of the iceberg, but with the whole problem. And it would bring the present legal thicket, not add to it.

Coherent Structure and Plain Language

Finally, I would like to say a word about the special effort that has been made to provide the proposed Act with a coherent, logical structure and to couch it in language that is as comprehensible as the subject and the substance permit.

I do not mean to claim that the Act will be easy reading for someone new to the subject. This is, after all, a complex and technical area; patent law is almost a profession in itself. We cannot avoid using its specialized terms -- "exclusive license", "field of use", "author's certificate", and so on. Nor can we avoid complex and technical provisions. The considerations bearing on policy in this area that must be accommodated within the rules established preclude simple solutions.

What we can do, however, is avoid the whereases, thereupons, convoluted constructions, and half-page uninterrupted sentences that still unfortunately abound in federal statutes and regulations. We can also structure the statute so that it is as easy as possible to follow and to understand and so that its principal provisions stand out. Those things the Administration has tried to do in drafting this legislation. I do not argue that we have succeeded completely, but I think we have succeeded substantially.

In our view, this is not a minor virtue, having to do only with the surface of things.

Not far from the surface, of course, "plain English" drafting reduces the length of the legislation and makes it easier to understand. All those who have to work with it -- especially laymen and those new to the subject, but experienced practitioners as well -- will therefore be saved both effort and frustration. Across the country that can add up to a big saving of effort and frustration.

A deeper contribution of "plain English" drafting is to the substantive formulation and subsequent operation of the statute. By making what is said plainer, it ensures that those who are to implement or comply can easily understand what is expected of them. It also minimizes the unintended ambiguities that create disputes in the administration of the statute. It thus makes a substantial contribution to the effectiveness of the law and the respect paid to both spirit and letter.

Most deeply, "plain English" highlights remaining flaws and issues that unfamiliar legalisms and convoluted structure would obscure. This is a vital, substantive service for drafters, legislators, and the public.

To us, indeed, that is one of the great virtues not only of the style in which the proposed Patent Policy Act is drafted, but of the Act itself. Whether it represents an ultimate resolution of the issues in Government patent policy remains to be seen. But its speedy enactment would remove the thicket of laws, Executive issuances, and regulations that now obscures this area. It would highlight the issues and allow us to move on to refinement of a coherent policy. It would also allow us to move on to related, probably more important, issues from which the tedious and seemingly endless debate on Government patent policy has been keeping us.

SUPPLEMENT TO THE TESTIMONY OF

CHARLES H. HERZ, GENERAL COUNSEL
NATIONAL SCIENCE FOUNDATION

BEFORE A HEARING OF

THE SUBCOMMITTEE ON SCIENCE, RESEARCH, AND TECHNOLOGY
OF THE HOUSE COMMITTEE ON SCIENCE AND TECHNOLOGY

February 8, 1980

Recoupment

The Administration's draft Government Patent Policy Act of 1980 does not include a recoupment provision because the Executive Branch already has a Presidentially-established policy on R&D Recoupment (Council on International Economic Policy Decision Memorandum 23, August 2, 1974) covering sales to non-U.S. Government buyers of Federally-owned or financed technologies or products. Establishing a recoupment policy for patents separate from other forms of Government-owned or financed technology would very narrowly limit the recoupment opportunity and would impose a significant administrative burden on the agencies in keeping recoupment records on a patent-by-patent basis. The Presidential directive would not be affected by passage of the Government Patent Policy Act of 1980. Presidential policy statements, like statutes, remain in effect until specifically revoked. Feliciano v. United States, 297 F. Supp. 1356 (PR, 1969), aff. 422 F.2d 943 (1st Cir., 1970), cert. den. 400 U.S. 823 (1970).

The Department of Defense (DOD Directive 2140.2, 05 January 1977) and the National Aeronautics and Space Administration (NMI 5109.13A, 15 June 1978) have already implemented this policy and the Office of Management and Budget is considering issuance of a uniform implementation directive to apply to all R&D agencies.

We at the National Science Foundation, because of our involvement at the basic research end of the R&D spectrum, have not adopted any general recoupment requirement because we believe that it would impair our efforts to transfer the fruits of scientific research to the general public. Most of our research is in a support or assistance mode and some degree of costsharing is generally required. NSF has negotiated recoupment arrangements in a limited number of instances when patent rights were left with an individual inventor rather than a grantee institution. We tend to discourage use of NSF funds to develop commercially marketable inventions.

We believe that a recoupment requirement in this legislation would be unwise. To be sure, the Government could make a claim to a share of revenues generated by an invention resulting from a procurement contract or an assistance grant.

Set against the depreciated benefits which might be gained through recoupment on a patent-by-patent basis are inevitable costs. Substantial administrative expense would

be imposed on both performer and agency. Negotiating "equitable" recoupment arrangements or handling exceptions to some statutory standard arrangement would be time-consuming and expensive. Costs of supervising those arrangements through required reports, audits, and so on would also be high. Performers would also have a greater incentive to put promising ideas "on the shelf" until the Federal contract or grant terminates, thus delaying benefits to the public.

For all these reasons, the National Science Foundation is inclined against any statutory recoupment requirement.

In short, we believe the wiser course would be to avoid any recoupment provision in Government-patent-policy legislation.

Definition of Small Business

The Administration's draft Government Patent Policy Act, like the University and Small Business Patent Procedures Act (S. 414), adopts the Small Business Act definition of a small business (Section 2 of P.L. 85-536, as amended; 15 U.S.C. 632) as implemented by the Administrator of the Small Business Administration.

> (a) For the purposes of this chapter, a small-business concern, including but not limited to enterprises that are engaged in the business of production of food and fiber, ranching and raising of livestock, aquaculture, and all other farming an agricultural related industries, shall be deemed to be one which is independently owned and operated and which is not dominant in its field of operation. In addition to the foregoing criteria the Administrator, in making a detailed definition, may use these criteria, among others: Number of employees and dollar volume of business. When the number of employees is used as one of the criteria in making such definition for any of the purposes of this chapter, the maximum number of employees which a small-business concern may have under the definition shall vary from industry to industry to the extent necessary to reflect differing characteristics of such industries and to take proper account of other relevant factors.
>
> (b) [irrelevant]

Under this broad statutory definition, the agency most familiar with the problems of small businesses -- the SBA -- would draw the line separating small from larger businesses. The SBA could either define "small business" for the purposes the Government Patent Policy Act through its extant regulations, which include a special definition of small business for Government procurement (13 C.F.R. §121.3-8), or adopt special criteria. The Administration intends that initially

the former tack will be taken, so the special preference given small businesses under the Government Patent Policy Act will be consistent with other Federal programs.

The National Science Foundation has used the SBA's criteria, specifically those related to Government procurement of research, development, and testing [13 C.F.R. §121.3-8(d)], in its small business programs without difficulty or complaint.

Mr. ERTEL. Thank you, Mr. Herz. We have had the occasion to have you answer many of the questions we have had along the line. We appreciate the fact that you have done that. Consequently, I told Mr. Brown my questions would be none. I am breaking that promise already and going to ask you one.

Are you saying that this legislation will supersede, then, all the Executive orders, all of the department policies, and this will be the primary legislation and then we will start from that as basically ground zero?

Mr. HERZ. That is exactly what I am saying. It would literally repeal all the 20-odd different statutes to which I referred. It would naturally supersede the executive issuances involved.

There is the President's statement of Government patent policy which has the effect of an Executive order. There are two additional Executive orders that would be superseded, as would all the regulations and the rules that have been put in place by the various agencies. There would presumably be regulations implementing this particular legislation. But what we would have is a consistent, coherent whole that allows sufficient flexibility so that agencies can respond to their missions and their particular programs under the particular circumstances of special cases. I don't think they are going to deviate from the policy very often.

Mr. ERTEL. Then I take it you differ with Dr. Baruch's statement when I asked him about recoupment. He said, we would go back to the Executive order that the President had issued in trying to get recoupment, and that that would be incorporated or at least a guideline for this bill.

Mr. HERZ. Mr. Ertel, I think the recoupment point is a very complex one. What I would like to do, if I may, is respond at some length to that question for the record rather than take your time now.

Mr. ERTEL. I would be happy to have that. I just think the two statements are inconsistent. I happen to agree with yours. I don't think the Executive order would supersede or even be part of it.

I am sorry, Dr. Baruch, I didn't mean to put you on the spot.

Dr. BARUCH. I have to rely on the advice of counsel for these matters. My understanding is that Executive order would not be replaced since recoupment involves not only patents, but many other activities of the Federal Government. And, therefore——

Mr. ERTEL. It would apply to the patent area?

Dr. BARUCH. That is my understanding on advice of counsel. I have to stand on that, that each agency would develop means for recoupment of anything that it licenses.

Mr. HERZ. If it determines recoupment is appropriate. It is not, I think, by the standard that is now out required to do that in every case. I would like to respond for the record on the exact effect of the standard and also speak to the recoupment issue generally.

To be perfectly straightforward about it, the recoupment provision was in the administration bill at one point. By virtually unanimous consent, it was taken out. I think the agencies were in complete agreement on that. And I would like to say why in some detail, because it is a complex issue.

Mr. ERTEL. I am sorry I opened such a bag of worms again. I thought it was a very simple, straightforward question.

Mr. EWING. Mr. Chairman, I think all three of us at this table are actually giving you the same answer in different words. Let me try it.

The bill as we propose it says nothing at all on recoupment. It doesn't require that there be recoupment. Because it says nothing at all on the subject, if enacted into law, the statute would leave in place an Executive order which does require agencies at the time of contracting to negotiate agreements permitting the Government to recoup various funds.

Mr. ERTEL. What happened to this idea of uniform patent policy, then? Somehow that seems to have gotten lost in this translation here. We are going now to leave this Executive order in place and we are going to start considering that as part of a patenting process, the agreement process.

What happened to the concept that we were going to try and pass a uniform patent policy if in fact we are going to go back and stretch back and pull out Executive orders and incorporate those provisions in the process, where a patent has become part of it.

I am getting a little confused at this point because the initial declaration here was we want a uniform patent policy. Now you are telling me instead of this statute, which I would have assumed would have basically overruled Executive orders, because legislation does that, now we are going back and incorporating past Executive orders.

Mr. EWING. Sir, because my department doesn't have strong views on this particular issue, I would certainly defer to Mr. Herz' suggestion that we attempt to answer this question more fully in writing after the hearing.

Mr. ERTEL. Let me ask one other question. One of the staff handed me this. I think it is a good question.

Are there other areas where Executive orders will remain in force in regard to this?

Mr. HERZ. Well, in general, I think if there is an Executive order that covers contracting generally, and doesn't specifically refer to the patent area, it would presumably remain in force. I cannot think of another case, however, that would have an impact on the area that this might.

Quite candidly, we ought to go back and see exactly what the effect is. I think your point is well taken, Mr. Ertel.

Mr. ERTEL. I have one other area. I am sorry to raise that one. It goes to recoupmemt. I had made that note when I read your testimony. You said the President's proposal differs from the other pending bills only in preserving the licensing role in Government markets, where the contractor has no deep or immediate interest.

I guess I have often thought that business had an objective. One of the primary objectives of business is to make a profit. It seems to me that is a deep and abiding interest. And, therefore, if we can listen profitably, that would be a deep and abiding interest in licensing to fields outside of their own specialty—if they detected that the field could be utilized profitably through the licensing of this invention.

What makes you think that we are going to have some mystique in this great body of Government that is going to discover all those other fields that business, which has an incentive to make a profit, has not discovered, and we are going to have Government regulators who have not particularly been noted for their innovativeness, doing this? Especially when they haven't had the research skills and the development, maybe, in many instances, of products.

Mr. HERZ. I would like to defer to my friend, the inventor and businessman.

Mr. ERTEL. Because he is a classic example of how a good businessman does it.

Dr. BARUCH. Thank you.

On the other hand, I was a small businessman. I may be irrelevant. Let me try and answer that question because I think it is a well perceived one and a well phrased one.

Business does have as a primary objective making a profit. One would say, then, business would be expected to license in all the fields of use that it saw possible. Business, however, has to evaluate its potential for making a profit by what it spends to make those profits. We often talk about the opportunity cost of capital.

One of the things that we find in the decisionmaking process in business is the equivalent opportunity cost of management attention. It is a primary limiting resource in much of business activity. And so we find that until one gets above a certain threshold of return, it is frequently the case, particularly in larger companies, that tasks are too small to attract the attention of the business. Licensing happens to be one of those.

There are radical inventions, of course, that can command tremendous licensing fees. But that is not the case in most of the things we are talking about. So we have the case where business, which rightfully is aimed at making a profit, as a matter of fact, making the best profit for the expenditure of its resources, would ignore and does ignore licensing.

We have the case where a group of Government people who are tasked with being licensors, wanting to perform well in the task they are assigned, as most Government people do, will therefore go out and license those inventions.

As Mr. Herz has pointed out, the sum of the effects will always be greater than the effect of business alone.

Mr. ERTEL. I hope not to be argumentative, but I hope the Government makes decisions on a rational and many cases economic basis. And I hope that they would go through some of the

same processes a business would, saying, is it worth it. And if business makes that judgment, what makes you think Government will make it better?

You are saying to me, Government is going to do it even though business elects not to do it.

Dr. BARUCH. That is right.

Mr. ERTEL. One questions the value of such a judgment.

Dr. BARUCH. The difference there is produced by the difference of the opportunity cost of managerial attention. In a large business you frequently don't tackle small jobs because you have a managerial structure that can pay its attention to very large tasks. Here you have another group that is specifically tasked. It may still be highly profitable for the Government and for the public interest.

Remember, the Government's task will not simply be to generate the most income, but rather to get the widest utilization of this invention. And you will expect that having different criteria and different costs of management's attention, a different rate of performance out of these marketers in the Federal Government.

Mr. HERZ. Mr. Ertel, I might just add to that, there is an obvious scale point here, for the Government would be handling the remaining fields of use of the inventions of many, many contractors, rather than just one company.

In that respect, it would be rather like a private patent management organization, such as Research Corporation. In addition, there is a point about the social return from the development of patents, and I believe there is some very good economic research on this, which is strikingly larger than the return that the private company can reap individually.

The Government might not indeed make a profit for the Government, but it might make a large profit for the public.

Mr. ERTEL. Thank you very much. We will be sending you questions.

I just might say one thing. Some years ago I invested in a small company called a patent manager. They took foreign patents into this country and sold and licensed them. That happened to be a bad decision. But I assume there are other companies around that make those judgments, go out and license patents.

I have not checked to see if they are available. But I assume they do operate in the private sector today. And it seems to me that they make some of these judgments. And here we are saying the Government is going to do a better job. I don't know if they will or not.

Do such companies still exist?

Dr. BARUCH. Yes. Research Corp. is an excellent example that markets the patents of not-for-profit institutions such as universities.

I might point out there is nothing in this legislation to prevent the Government from utilizing the services of an organization like the Research Corp. for doing the licensing in the fields of use.

Mr. ERTEL. Who pays for that?

Dr. BARUCH. The Research Corp. pays its expenses out of the royalty returns that it gets from such licensing activity. And above that, the returns go to the agency.

Mr. EWING. May I just note that Mr. Herz already has previously mentioned that, under the administration's bill, the contractor can designate broad fields of use and utilize other companies to license thereunder.

The administration's bill does not restrict the ability of businesses to use other companies to license their exclusive rights. What the bill does, it seems to me, is focus the attention of businessmen, marketing organizations, and those responsible government officials on the issues of identifying potential fields of use and commercializing an invention in as many fields as possible.

Mr. ERTEL. Have you ever prosecuted a patent?

Mr. EWING. No, sir. I am not a patent lawyer.

Mr. ERTEL. Most patent attorneys I have seen start out with a very limited claim. They broaden their claims until they cover the broadest possible spectrum.

And I suspect that one of the practical results of the field of use is the patent attorney will start out with a claim in a very narrow sense, is that he protects his client and then starts to expand until he covers the whole periphery of the contract.

And you are going to get into a very wild negotiating position between the Government and that person.

Mr. EWING. No, sir, there is no negotiation between the contractor and the government when the fields of use are selected. The contractor unilaterally designates the fields of use. The contractor's incentive to designate with specificity is created by the noncommercialization march-in right, which permits the government to terminate a contractor's exclusive rights in any field designated but not commercialized.

This mechanism focuses the attention of all parties concerned on what is important, namely, the actual commercialization in as many fields as possible of a product of the government sponsored or aided research.

Mr. ERTEL. Mr. Brown?

Mr. BROWN. Gentlemen, I would like to compliment you on having made an excellent presentation of the administration's position here. You have made it far easier to defend and justify that. Let me just ask one question:

I infer from what has been said here, Mr. Herz and the rest of you, that there will be some need for what you might call clean-up legislation, that is, to modify existing statutes which contain different or contradictory patent provisions.

Several of these existing laws fall within the jurisdiction of this committee—the energy research and development, nonnuclear energy research and development, the National Science Foundation, and so on.

Have you contemplated the necessary steps to bring about such a cleanup of the existing laws?

Dr. BARUCH. There is a repealer section in the bill.

Mr. BROWN. A repealer section?

Dr. BARUCH. Yes, section 508.

Mr. BROWN. So that we would then not face a problem of opposite provisions and sections. Then I would just like to make one last comment.

I am sure you gentlemen are well aware of the fact that the primary responsibility for patent legislation resides in the Judiciary Committee, not here. Our role essentially is one of contributing to a sense of priority on this legislation as it involves the Federal research activities that we are concerned with, and to some degree contributing to shaping this legislation to reflect any special needs in this area that we might have.

You will have to go through this defense before a committee with a slightly different orientation. We have our share, but we are not dominated by attorneys here as the Judiciary Committee is, it is in the committee or the staff of the committee. And, hence, you will find many of these questions raised by Mr. Ertel I am sure brought up even more forcefully in the Judiciary Committee when you appear there.

Thank you, Mr. Chairman.

Mr. ERTEL. I would like to thank you very much for your time and patience and very lucid discussion of the issues. Thank you very much.

Without objection, I would like to insert in the record the opening remarks of the Honorable Harold Hollenbeck immediately after my opening comments.

Mr. BROWN. Mr. Chairman, can we make sure that the record includes the testimony of Mr. Herz before the Senate?

Mr. ERTEL. Thank you, Mr. Brown. I think I did cover that earlier. But if I did not, it is so incorporated.

Our next panel of witnesses, which we hope won't be quite as long a questioning period—Mr. Kenneth Payne, secretary, Licensing Executive Society; Mr. Frank Lindsay, chairman of the board, ITEK Corp., Lexington, Mass. and chairman, Research and Policy Committee, Committee on Economic Development; Mr. Harry Manbeck, general counsel, General Electric Corp., Fairfield, Conn.; Mr. Eric Schellin, Small Business Legislation Council, and Mr. Howard Rose, chairman, Patent Task Force, Institute of Electrical and Electronic Engineers, Inc.

I would like to welcome you gentlemen. I am sorry that we were so long on the administration panel. But there were substantial questions that I had and still have, and we will be following up and writing to them.

I have not had the opportunity to read your written testimony. But I hope you will be hitting many of the points that seem to be in controversy here.

I am looking forward to your testimony. We will go right through the panel, and maybe come back for general questioning rather than stopping each time, because what happens is that, as we noted, I would ask the question of one and somebody else had an answer. Maybe if we did your testimony first and came back to the questioning, it would be more beneficial.

I would like to start with Mr. Kenneth Payne. I appreciate your coming today.

STATEMENTS OF A PANEL CONSISTING OF KENNETH PAYNE, SECRETARY, LICENSING EXECUTIVE SOCIETY; FRANK LINDSAY, CHAIRMAN OF THE BOARD, ITEK CORP., LEXINGTON, MASS., AND CHAIRMAN, RESEARCH AND POLICY COMMITTEE, COMMITTEE ON ECONOMIC DEVELOPMENT; HARRY MANBECK, GENERAL COUNSEL, GENERAL ELECTRIC CORP., FAIRFIELD, CONN.; ERIC SCHELLIN, SMALL BUSINESS LEGISLATION COUNCIL; AND HOWARD ROSE, CHAIRMAN, PATENT TASK FORCE, INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS, INC.

Mr. PAYNE. Thank you, Mr. Chairman.

Members of the committee, it is a pleasure to be here today and have the opportunity to appear to discuss this very critical matter.

I have submitted a written statement which I would like to ask your permission to have submitted in the record, and I will attempt to summarize that.

Mr. ERTEL. We would appreciate the summarization of your statement.

Mr. PAYNE. Thank you. I will not dwell on the need for change of the Federal patent policy, but rather go directly to the mechanism designed to effect that change.

Basically, that mechanism will have to satisfy several sometimes conflicting interests.

One, fostering widespread use of federally funded inventions.

Second, to encourage involvement in Federal R. & D. by skilled and experienced contractors.

Lastly, to enhance competition and reduce administrative burdens.

In my view, if those goals are to be achieved, the mechanism has to have several distinct attributes.

First, it must grant exclusivity in some form. If the investment in commercialization of inventions is to be induced, the mechanism has to provide the contractor with a clear opportunity to return his investment and to make a profit.

Second, and I think very significantly, there is a need to motivate contractors to divert their research and development personnel from activities where exclusive positions can be developed. A corporation has limited time and money to invest. It is going to invest where it can develop the best deal for itself.

Another attribute is predictability. The contractor needs to be able to predict with some degree of certainty, the nature of the rights that can be attained.

Security. He has got to have some idea, some degree of security that rights once attained can be maintained.

Efficiency. The last attribute of the mechanism that must be achieved—for obvious reasons of cost to the taxpayer—but in addition, an inefficient type of system will not achieve the predictability and security that is necessary to induce both participation and investment.

In my view, these attributes, can be achieved by the mechanism defined in H.R. 5715, the grant of title to the contractor.

The administration's bill, while it might provide some enhancement, has costs and difficulties which will far outweigh any imagined benefits.

In particular, I want to direct my attention to three such difficulties.

The difficulty of defining fields of use.

The difficulty of insuring that a contractor having limited rights will obtain adequate patent protection.

Last, the very, very difficult procedure of attempting to license bare, naked patent rights, without know-how technology, without personnel who have expertise in the particular field, and without management and business experience in the particular industrialized fields involved.

It is not easy to define a field of use, particularly at a very early stage of development. We are talking on the average of about 10 to 15 years to take inventions from their inception to the marketplace, longer and shorter periods as well.

Fields of use can take a variety of forms. They can be very broad, they can be very narrow, and any degree in between. A field of use can be stated as use in the entire aircraft industry, or it can be for a landing gear in single engine, prop-driven aircraft.

In one particular Supreme Court case, a field of use was defined as amplifiers for home use. The commercial market was excluded. Fields of use can be negatively stated. You can say all fields of use except a particular field.

In one prior case, the licensee said, all fields of use in making plastic articles except hobby horses. And, in fact, if I were operating under the mechanism of the administration's bill, I would attempt to define all uses except those where I knew the inveation was not useful. I would attempt to cover as many uses as I possibly could.

In my view, the mechanism defined in the administration's bill will result in lengthy debates and negotiations between the contractor and the Government agency. The contractor will attempt to obtain the broadest possible coverage, thus to license the broadest possible use of the invention.

The administration's bill, however, gives the agency the right to reject within 90 days the request of the contractor for such broad, discretionary reasons as being contrary to the agency's mission, impairing national security, or violating certain aspects of the antitrust laws.

Interestingly, if the agency doesn't attempt to negotiate, doesn't attempt to cut back on the contractor's request, it is quite likely there will never be anything left, never be a field left where significant licensing can take place without exercise of the so-called march-in rights at a later point in time.

At the beginning the contractor will try to be as broad as possible, and the Government will have to negotiate, unless it is going to be left with only insignificant areas in which to license others.

Frankly, I just don't believe that this is going to be an automatic procedure. There will be negotiations. And once negotiations start, the predictability and security that is necessary to the mechanism will be diminished or lost.

Furthermore, the desired uniformity of administrative action will not be achieved because agencies will have different attitudes and views as to when the contractor's rights should or should not be cut back.

I would like to go to the second area of difficulty, contractor responsibility for patent rights.

My concern here is that the contractor, having only limited rights, may not obtain adequate protection for the inventions in all fields. Frankly, it may simply not be in his interest to do so. And this is particularly true if he is limited to very narrow fields.

Let me step back for a moment and explain the concept of patent claims and the claiming of an invention. Patent protection is provided for in the claims of the patent, and to attempt an analogy, you might consider those claims like the metes and bounds of a property description.

The Patent Office can grant property of 1 acre or 10,000 acres. The amount of property, if you will, that is granted by the Patent Office is going to in large measure depend upon the way in which those rights are negotiated with the Patent Office.

Here we are in another negotiation type process. That negotiation takes place with a patent examiner by writing, by face-to-face interviews, by telephone conferences. The negotiation can be escalated to the Commissioner of Patents, to the Board of Appeals, and the CCPA, the Court of Customs and Patent Appeals.

This negotiation can be very costly in both money and time. A party who doesn't have broad rights covering all the fields does not have the necessary interest or incentive to undertake this type of negotiation, this type of prosecution, before the U.S. Patent Office.

In fact, situations of direct conflict could develop. If a particular contractor in attempting to obtain patent coverage, finds that the coverage is extending to a product which is useful in another field, where he doesn't have rights, and where in fact exclusive rights may or may not be granted to another party, by the Federal Government there may be the desire to omit that particular degree of coverage.

Let me give you an example——

There was a patent application covering film. That film was useful in aerial reconnaissance, X-ray, and microfilm. Fortunately, the contractor had title in this particular case.

The prosecution before the Patent Office was lengthy. According to my discussions with that contractor, he could have dropped patent coverage to X-ray and microfilm at a particular point. It would have been easier. It would have been cheaper. But he did not. They went on with the prosecution before the Patent Office and they obtained the coverage that they felt was justified.

I am not suggesting that contractors would deliberately sabotage this type of patent coverage. I am suggesting that it is expensive, it is time-consuming and, quite frankly, their heart and soul might not be in going forward with that type of effort.

Last, I want to make a point about the attempts to license bare patent rights. The U.S. chapter of the Licensing Executive Society is an organization of 1,700 engineers, businessmen, and lawyers who are actively involved in the licensing of technology, as both licensees and licensors—in discussions with many of these people, I have found tremendous difficulties in attempting to license bare patent rights.

What the licensors typically want is know-how or at least technical assistance from experts who are knowledgeable in the particular technical area.

The universities in particular have found it very difficult to license where all they have are patent rights. If you consider the fact that the administration has said that we will have an automatic procedure wherein exclusive fields will be granted, I can only assume that the Government will have then the opportunity in fields of lesser potential to license bare patent rights, an extremely difficult thing to do.

I would question that a cost-benefit analysis has really been conducted on this particular point.

The contractors, on the other hand, will have know-how. They will have personnel who have some expertise in the particular field. And they will even have some knowledge in fields other than the one in which they are operating. They can provide some degree of technical assistance and know-how into such other fields. They will be in a better position to license the technology than will the Government.

In addition, I must take issue with the earlier witnesses who suggested that large corporations are not interested in licensing and tend to ignore licensing.

Quite frankly, that is not the case. There have been numerous articles written on the efforts of large corporations in licensing their technology into other fields.

I have recently read an article on the efforts of General Electric in this regard.

In contrast to the administration bill, H.R. 5715, by placing title in the contractor, will provide incentive on the part of the party prosecuting the patent application, to obtain adequate patent protection.

It also will provide incentive for contractors to seek out Federal R. & D. products because exclusive rights can be achieved and the nature and scope of the exclusivity will be predictable, thus there will be security in the rights that can be obtained.

The only two questions I have in regard to H.R. 5715 concern the need for recoupment and the march-in rights. I question the need for recoupment of any type. I suggest that the money can be better spent in further commercialization efforts.

I also question the broad discretionary rights to take away certain of the exclusive rights. And I am primarily directing my attention to what I believe is 313(2)(G)(D) which after 10 years permits the Government to step in and grant or request the grant of licenses from the contractor, that is 10 years from the date of the invention or 7 years from commercialization of the invention, whichever occurs first.

My problem is that 10 years from the date of the invention could be just about the time the invention hits the marketplace, just about the time the contractor is beginning to recoup his investment, beginning to make a profit.

And at that point in time, for very, very broad discretionary reasons, an agency can require that the contractor's exclusive position be diminished.

Mr. Chairman, I have enjoyed the opportunity of being here today and participating. And I must commend both the administration and the committee for undertaking this effort in a very difficult area.

Thank you.

[The prepared statement of Mr. Payne follows:]

STATEMENT OF

KENNETH E. PAYNE

SECRETARY OF THE LICENSING EXECUTIVES SOCIETY

BEFORE THE SCIENCE, RESEARCH AND
TECHNOLOGY SUB-COMMITTEE OF THE
COMMITTEE ON SCIENCE AND TECHNOLOGY

UNITED STATES HOUSE OF REPRESENTATIVES

FEBRUARY 8, 1980

Mr. Chairman, Members of the Committee I am very pleased to have the opportunity to appear here today to present my views and those of the Licensing Executives Society on legislation designed to increase commercialization of federally funded inventions. It is my understanding that the Committee is basically interested in the relative merits of the President's draft bill entitled "Government Patent Policy Act of 1980" and H.R. 5715, the "Uniform Federal Research and Development Utilization Act" introduced by Mr. Ertel.

Before undertaking evaluation of certain aspects of these bills, I should note that the United States chapter of the Licensing Executives Society is made up of approximately 1700 engineers, businessmen and lawyers who represent both licensees and licensors in the transfer of technology. The international organization of LES is comprised of 18 chapters representing 26 countries and has about 3500 members who likewise are engaged in technology transfer.

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LES has not yet considered the President's draft bill or Mr. Ertel's bill. While I am stating my own views this morning, I have discussed these views with numerous LES members.

From a review of the record of prior hearings before this and other committees, the need for change is recognized. The real question appears to be what mechanism or administrative system can be used to achieve that change. How can a mechanism be designed to meet the diverse and perhaps conflicting interests of fostering widespread use of federally funded inventions, enhancing competition, encouraging involvement by skilled and experienced contractors and reducing administrative burdens? What must such a mechanism provide to meet these goals?

First, the mechanism must provide for exclusivity if contractors are to be induced to invest time and money in commercialization of inventions. The contractor must have an exclusive position for a period of time during which he can obtain a return of his investment and make a profit. Furthermore, exclusivity is essential as a motivation for the contractor to divert his valuable research and development personnel from other efforts where exclusive positions can be established.

If contractors are to be encouraged to undertake federal R&D projects, the mechanism must provide for predictability.

The contractor should be able to reasonably predict the nature of the rights that can be attained from his involvement in federal R&D projects.

The mechanism must also provide security in that rights promised or granted will not be denied or taken away except for reasons clearly defined in the statute.

Last, the mechanism must be efficient both for obvious reasons of cost to the taxpayer and because an inefficient mechanism will probably not achieve the required degree of predictability and security necessary to induce participation and investment.

If a mechanism can be designed to effect these goals, it will provide for increased commercialization of federally funded innovations, and act as an inducement for skilled and experienced contractors to compete for federal R&D projects.

In order to maximize commercial development of federally funded inventions, the risks of undertaking the lengthy and very expensive process of commercial development must be minimized. The patent system aids in reducing these risks. It does not eliminate the risks. It does not provide a free ride or an assurance of success. But developers of commercial technology will readily admit that the security afforded by a sound patent position is often critical in decisions to allocate large sums of money to commercialization efforts. Without this security many inventions now enjoyed by the public would not have reached the marketplace.

If the Congress seeks a policy of increasing commercialization of federally funded projects, it must enhance the exclusivity of the contractor's rights. This is clearly achieved by giving the contractor title to any patent rights developed in federally funded projects. While some enhancement might also flow from the grant of an exclusive field of use license, the difficulties and costs of such a mechanism seem to far outweigh whatever benefits might be imagined.

The government's task under the President's draft bill could be staggering. It is not easy to define a field of use. The field may be very broadly or very narrowly defined, as well as a variety of degrees in between. In commercial technology transfers, field of use definitions are often the subject of debate and negotiation. This same type of negotiation would surely result between the contractor and the government.

Furthermore, the agencies will develop differing practices and views as to what rights should be granted; some will accept broader fields of use than others. Thus, the mechanism of the President's draft bill, by the discretion it places in the agencies, could defeat the uniformity of administrative action that is sought by defining an overall federal patent policy. The problems of defining fields of use are discussed in greater detail at pages 8 to 11.

Furthermore, placing the contractor, a party with a limited right, in charge of the prosecution of a patent

application may not, without strenuous supervision by the government, result in patent rights that can be relied upon in a variety of fields. It might not be in the interest of the contractor to spend the time and money necessary to seek broad patent coverage useful in fields other than that in which he has been granted rights. In fact, the contractor may find himself in a direct conflict of interest. The patent rights he might seek could be used to foreclose his use of the invention in various fields by the subsequent grant of exclusive licenses to others. The problems of placing responsibility for obtaining patent coverage of an invention in a contractor having limited rights are discussed in greater detail at pages 12 to 14.

Finally, I question that any real cost benefit analysis has been conducted in regard to this mechanism. Simple logic would suggest that contractors will attempt to achieve exclusive positions in all significant fields of use. The government must negotiate to cut back the fields of exclusivity or be left to license in fields of lesser potential. If negotiation does not occur, the government will be in a position of licensing bare naked patent rights without the know-how technology and technical and business expertise which is so critical to most successful technology transfers.

In contrast to the President's draft bill, H.R. 5715 would, subject to certain exceptions, grant title to the contractor where he (1) elects to file a patent application on an invention developed under government contract and (2) intends to commercialize or otherwise achieve widespread utilization of the invention by the public. In turn, the federal agency sponsoring the research and development will obtain a non-exclusive, non-transferable, irrevocable paidup license under the patent.

H.R. 5715, in addition, provides safeguards to insure that the contractor's full rights will be retained only in the event that he achieves adequate commercial use of the invention. If the contractor fails in this regard, the federal agency, pursuant to Section 313, will have the right to require the contractor to grant a non-exclusive, partially exclusive, or exclusive license to a responsible applicant upon reasonable terms.

While I question the degree of discretion given the government agencies in diminishing the contractor's full title rights, the basic mechanism of H.R. 5715 is far preferable to that of the President's bill. The primary responsibility for commercialization of the invention in all fields rests initially with the contractor. Over the years, the contractor

will develop critical know-how for manufacture of the inventio for use in one or more fields and will, in all probability, have some degree of expertise which can be transferred to others for use of the invention in additional fields. At least he will have scientists and engineers knowledgeable in the technology who can assist the licensee in its efforts of commercialization.

In this manner the desired degree of commercialization of the invention can be achieved at a minimum of government expense. In addition, where the contractor has the full potential of exclusive rights in all fields, he has the incentive to file and prosecute patent applications that will provide adequate protection in a variety of fields of use.

I want to commend the efforts of this committee and the administration in attempting to solve the difficult problems related to the commercial use of federally funded inventions. The time has come, however, to provide a uniform patent policy that stimulates and encourages commercialization of invention to the full benefit of the public. This goal can best be achieved by the granting to the contractor full title to the developed patent rights.

Discussion of the Problems Of
Exclusive Field of Use Licensing
As a Mechanism To Commercialize
Federally Funded Inventions

Section 201(b) of the President's bill requires every contractor to provide timely written reports including a list of each field of use in which the contractor intends to commercialize the invention or otherwise achieve public use. It is apparent from this section that the government expects such reports to be prepared before the filing of the patent application. If the contractor complies with Section 201(b) and files a patent application within a reasonable time, according to Section 203(b), he will receive an exclusive license under the patent in each described field of use.

However, the agency has the right under Section 203(d) to reject any described exclusive field of use for a variety of reasons including such broad discretionary bases that such (1) would be contrary to the requirement of the agency's mission, (2) impair national security, or (3) violate the acquisition of assets provisions of the antitrust laws. The agency's determination under Section 203(d) can be appealed within 60 days to the United States Court of Claims who will have exclusive jurisdiction to determine the matter and either affirm, reverse, or modify the agency's determination.

These provisions may create a procedure of negotiations between the agency and the contractor concerning the scope

of the contractor's exclusive rights. The contractor, being required to define a field at a point in time when he probably has little knowledge of the potential uses of the invention, will seek the broadest possible definition of the field. The government agency, depending upon its attitude, will probably seek some reduction in the scope of the defined field. Obviously, the broader the contractor defines his exclusive field of use, the fewer fields will remain in which the government can grant exclusive or non-exclusive licenses. As a result, the security and predictability which a revision of government patent policy should seek to achieve will be defeated, in part, to the extent that the government agency has discretion to reduce the field in which the contractor seeks exclusive rights.

Field of use licensing is a term of art describing agreements under which a contractor grants a licensee restricted use of the patented subject matter. In this manner the licensee is free from litigation for patent infringement so long as he operates within his defined field. If the license is exclusive, other licensees will not be given such immunity from suit within the that field.

This form of licensing has long been recognized by the courts as legal even though it can be used by competitors to divide markets and customers, a practice otherwise illegal. In one early case, the patentee licensed patented amplifiers

for use only in the private or home field. There was an express covenant in the license agreement which excluded the licensee from manufacturing amplifiers for commercial use.

Defined fields of use, however, can take a variety of forms. A field of use can be defined very broadly; for instance, it may permit use throughout the aircraft industry. Conversely, it may be very limited; for instance, it may permit use in the aircraft industry on single engine prop-driven aircraft.

A field of use definition can also be one where all fields of use are granted except those specifically excluded. As a result, a field of use restriction can be written to provide that the invention may be used in all fields except the automotive field or except in the automotive field in engines below a specified power rating. In a prior litigation, the court considered a license provision that permitted use of the invention in the manufacture of all plastic articles except hobby horses.

The point of the above examples is simply to demonstrate that there is no magic in the term "field of use". Defined fields of use may be extremely broad or very narrow. The contractors will undoubtedly strive to define the broadest possible field and the government may attempt to restrict those fields.

This situation is made even more difficult by the fact that the fields of use must be defined at a very early point in the development of an invention. As recognized by Mr. Jordan Baruch, "the progress of an invention from idea to commercial product or process ordinarily is long and expensive." Many years often pass between the time an invention is conceived and introduced into the marketplace.

Our patent system, however, is designed to encourage the early filing of patent applications. As a result, an inventor may file several patent applications over the period of development of any invention. During this time, the invention will probably change in character and the fields of use to which it is applicable may also change. The applicable fields of use of the invention may even change during the two (2) year pendency of the patent application before the U.S. Patent and Trademark Office. Thus, the contractor may have to negotiate new exclusive fields of use from the government.

Conceivably, earlier filed patent applications will have designated exclusive fields of use that differ, perhaps significantly, from those designated in regard to later filed applications. Since patent rights granted on earlier applications may or may not dominate later filed applications, the rights of the contractor and the government could become quite confused over the development period.

Discussion of the Potential Problems Of Preparation and Prosecution of Patents by Contractors Having Limited Rights

Section 203(b) of the President's draft bill also provides that the exclusive license will be granted to the contractor in each described field of use if a contractor within a reasonable time files a patent application on the reported contract invention. Thus, it appears that the contractor has the responsibility for preparation and prosecution of the patent application. In order to consider the ramifications of this procedure, I should first review the nature of the legal protection afforded by a patent.

A patent application contains specifications and drawings which describe the invention in sufficient detail that one skilled in the art would be capable of practicing that invention. Furthermore, the law requires that the specification define the preferred embodiment of the invention. However, the legal rights conferred by the patent are defined specifically in one or more claims located at the end of the specification.

The claims are written descriptions of the invention that define the scope of the patent rights granted. Like the metes and bounds of a property description, claims, in effect, lay out or describe the property to which the patentee is entitled. The claims may define broad or narrow patent

rights, and using the analogy of a property description in land titles or grants, can define rights in one acre or 10,000 acres. A court uses the claims in determining whether a party has infringed a patent, i.e. trespassed upon the property defined by the patent claims by practicing a process or selling a product that falls within the scope of the claims.

The patentee or patent owner typically negotiates with the U.S. Patent and Trademark Office over the scope of the patent claims. The patentee attempts to obtain the broadest possible coverage in light of its interpretation of the invention, while the Patent Office attempts to narrow the coverage consistent with its view of the invention. This negotiation may be in writing or by telephone or a face-to-face discussion with the Patent Examiner and can escalate to the Commissioner of Patents, the Board of Appeals and the Court of Customs and Patent Appeals.

A patentee that has only limited rights to the invention is placed in the unique position of attempting to obtain rights which he may use, as well as rights which may be used against him. For instance, the government will acquire, under the President's draft bill, title to all patents and may, pursuant to Title 4 of that bill, grant exclusive licenses to others in fields not designated by the contractor. As a

result of subsequent grants of exclusive rights in other fields, the contractor would be foreclosed from such fields.

Assuming that a contractor initially defines his exclusive field too narrowly, or has been forced to a narrow field through negotiation with the government agency, he may in some circumstances, have little desire to work hard to obtain rights broad enough to encompass other fields of use in which he has no exclusive rights or from which he may subsequently be excluded. If patent rights applicable to such other fields are not granted, the contractor, like everyone else, is free to practice the invention in those fields. As a result, contractors may find themselves, if not in situations of direct conflict of interest, at least in a position where their heart and soul might not be in their efforts.

Mr. ERTEL. Thank you very much. I certainly appreciate your comments and am in accord with most of them. I cannot think of too many I am not in accord with.

We will continue on to Mr. Frank Lindsay. Your written statement will be entered in the record without objection. You may either summarize or read it, whichever you prefer.

Mr. LINDSAY. What I would like to do, Mr. Chairman, is submit both my written statement and the written summary of the statement for the record. I will even reduce the summary further to a few observations that may be relevant to this morning's discussion.

I am chairman of the Research and Policy Committee of the Committee for Economic Development. We have recently issued a major policy statement on "Stimulating Technological Progress." In it we have proposed an overall strategy to reverse the lagging trend of innovation in the United States.

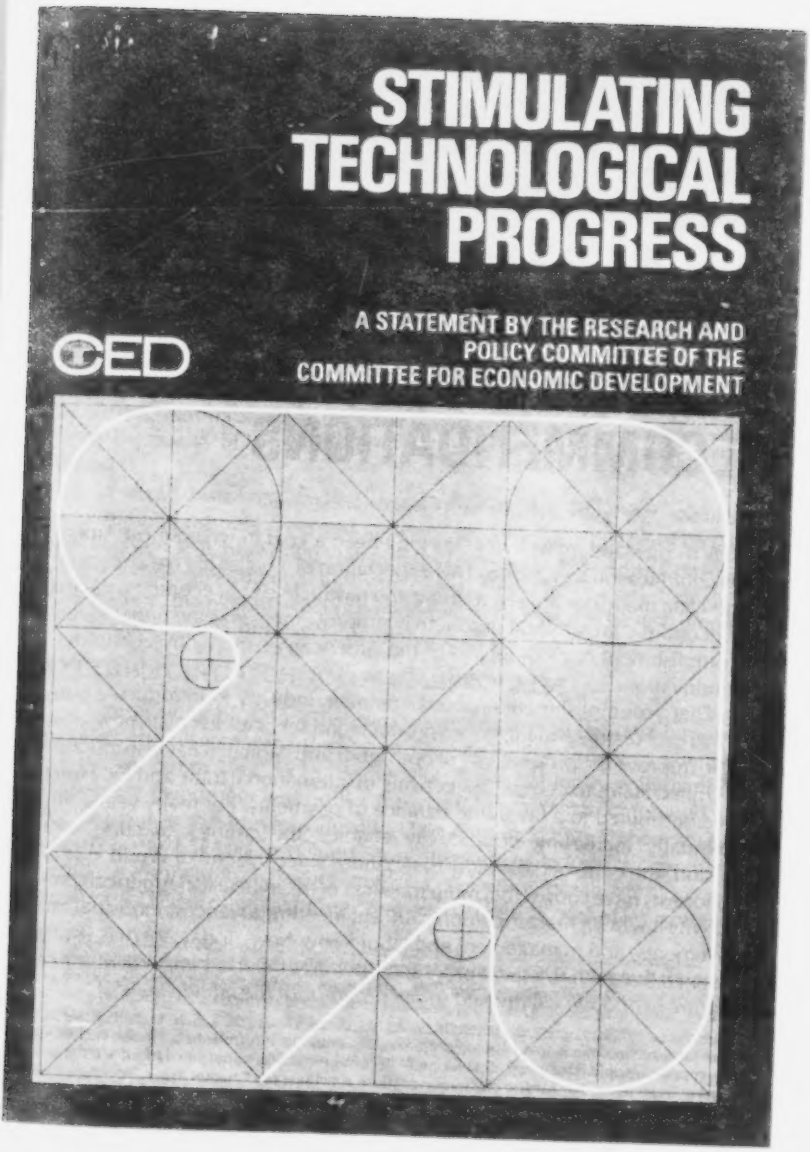
Among the remedies we recommend for this comprehensive approach are increasing innovation through the market economy by raising investment in new plant and equipment through tax policy changes, reducing regulatory uncertainty and constraints, and directing Federal R. & D. support toward basic research.

Improving the effectiveness of the patent system is another vital part of the CED proposals. One of the major conclusions of the CED policy statement is that the current patent system falls short of what was meant to be its No. 1 objective, providing effective incentives for developing new inventions and encouraging the utilization of successful results of research and development.

I understand that you have been provided with a copy of "Stimulating Technological Progress." With your permission, Mr. Chairman, I wish to submit for the record the summary recommendations and the chapter and appendix of the CED policy statement which deals with patent policy's role in the innovation process.

Mr. ERTEL. Without objection.

[The information follows:]


STIMULATING
TECHNOLOGICAL
PROGRESS
CED
A STATEMENT BY THE RESEARCH AND
POLICY COMMITTEE OF THE
COMMITTEE FOR ECONOMIC DEVELOPMENT

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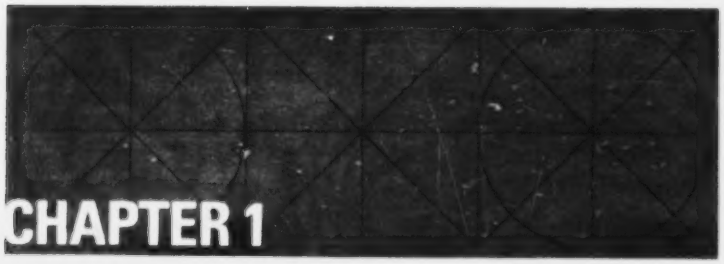

CHAPTER 1

INTRODUCTION AND SUMMARY OF RECOMMENDATIONS

A rising standard of living has long been a goal to which most Americans could reasonably aspire. This expectation of a better life has been supported and made possible by a strong and productive U.S. economy. Pacing that economic growth and productivity improvement was the unparalleled accomplishment of most sectors of the American economy in technological innovation.

That accomplishment enabled American industry to introduce a constant stream of new and improved products and services, to create new jobs, and to improve the productivity of both labor and capital. It has also enabled the United States to compete effectively in international trade and for a long time contributed to a favorable balance of payments. For many years, this continually increasing productivity enabled the country to cope with inflation, the bane of most industrial nations since the end of World War II. Economists have shown that more than half of the increase in American productivity has been due to scientific and engineering advances, industrial improvements, and management and labor know-how. Today, there is strong evidence that *technological progress is perhaps the most important source of future economic vitality and social progress for the United States.*[1]

[1] The term *technological progress* encompasses a number of interrelated activities, including basic research, applied research, development of commercial feasibility, innovation, and the diffusion of innovation. For further discussion of these activities, see Chapter 2.

From the end of World War II to 1964, U.S. labor productivity in the private business economy increased at an annual rate of over 3 percent; but over the past several years, the annual growth rate has declined to *less than 1 percent*. The overall *level* of productivity in the U.S. economy is higher than the level in all other industrial nations. But in the manufacturing sector of the economy, which has always been in the forefront in using technological innovation to raise productivity, this country's international competitors are rapidly catching up. Between 1960 and 1978, the average annual rate of productivity improvement for manufacturing in the United States was 2.8 percent compared with 8.2 percent in Japan and 5.4 percent in Germany. The rate for the United States was also lower than the rate for the United Kingdom (2.9 percent).

Recent productivity improvements have been insufficient to offset the cost of wage increases, and the resulting rising labor costs have contributed to inflationary pressures. Growth in real incomes has slackened. *This country cannot reasonably hope to control inflation, raise real incomes, and improve the quality of living unless the unfavorable trend in productivity is reversed.*

In some instances, technological change may impose undesirable short-term adjustment costs and undesirable side effects that must be taken into account. But more often than not, the best way to deal with adverse side effects is through additional innovations that eliminate or ameliorate them. On balance, the overall effect of technological change will be new employment opportunities and greater economic and social progress.

ENCOURAGING TECHNOLOGICAL PROGRESS

The slowing of productivity improvement during the past few years parallels the discouraging decline in the rate of investment in plant and equipment. From 1968 to 1978, the annual average increase in plant and equipment investment was only 2.6 percent in real terms, compared with 6.2 percent in the previous decade. The data in Figure 1 show that the United States has lagged behind most other major industrial countries in capital investment in manufacturing as a proportion of the gross domestic product (GDP)[2] of manufacturing companies. The U.S. rate of investment as

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[2] Gross *Domestic* Product (GDP) rather than Gross *National* Product (GNP) is used for comparing output per employed person among countries. GDP represents the final output of goods and services produced by a country's economy by residents and nonresidents. In contrast, GNP includes incomes (wages, interest, dividends, etc.) from abroad accruing to residents and excludes incomes earned in the domestic economy accruing to persons abroad. Since the comparative performance of economies is the main focus of this policy statement, GDP is the appropriate statistic to use.

a proportion of GDP has averaged about one-half the rate for France and Germany and about one-third the rate for Japan.

This decline is serious because investment in capital equipment not only improves productivity and stimulates employment opportunities but also encourages investment in inventive and innovative activity. Although total U.S. research and development (R & D) expenditures are much larger than any other nation's, a large portion of this country's effort is directed toward defense and space programs. These federally supported programs were sharply curtailed during the late 1960s and early 1970s, and private R & D efforts have not risen sufficiently to offset the government reductions from their peak in the mid-1960s. In 1976, industry-funded research and development was 1.05 percent of the gross national product (GNP) in the United States, 1.18 percent in West Germany, and 1.25 percent in Japan. Because of the rapidly increasing sophistication of modern techniques and equipment used in research, the cost of maintaining the existing level of R & D effort is rising at a rapid rate. Over the past several years, the focus of industrial research and development has shifted toward more conservative, shorter-term targets.

FIGURE 1

Average Annual Capital Investment and Rate of Growth in Output in Manufacturing

Country	Capital Investment as Proportion of Output* (Average Annual Percent, 1960–1976)	Growth in Output per Employee Hour** (Average Annual Percent Increase, 1960–1978)
United States	9.1	2.8
United Kingdom	13.5	2.9
France	19.2[a]	5.5
Canada	14.7	4.0
Germany	15.9[b]	5.4
Japan	28.8[c]	8.2

*For comparative purposes output is measured at current factor cost.
**All employed persons for U.S. and Canada; all employees for other countries.
[a] For total economy.
[b] 1960-1976.
[c] 1960-1974.
SOURCE: U.S. Department of Labor, Bureau of Labor Statistics.

Why has U.S. investment in the sources of technological progress lagged so badly? *This Committee believes the main cause is that some current public policies actually discourage new capital investment. They have also caused business to shift some of its R&D efforts from longer-term to more defensive, short-term goals.**

During the 1970s the relationship between the risk and the potential reward for longer-term, high-risk investments has changed. Certain policies have increased the risks of investment and have reduced potential rewards. Increased risk and uncertainty have resulted from the expansion and administration of government regulatory activities and uncertain energy and economic policies; reduced potential rewards have resulted from a combination of current tax policies and the failure to control inflation. Consequently, funds are being channeled away from more uncertain innovative opportunities and toward more certain consumption-oriented and hedging types of investments instead.

We feel that unless there is speedy correction of public policies that inhibit the development and application of new products and processes within the market system, the nation will find it increasingly difficult to solve its other economic problems and achieve its social objectives.

SUMMARY OF MAJOR POLICY RECOMMENDATIONS

On the basis of this Committee's analyses of the issues, we recommend a series of changes in current public policies.

TAX POLICY CHANGES

There is strong evidence that since 1973, a low rate of capital formation has contributed substantially to lower productivity growth.[1] Part of the problem is attributable to the combination of existing general tax policies and inflation. Federal tax revenue as a percentage of GNP was 18.5 percent in 1976; it will be about 20 percent in 1979 and is expected to be about 21 percent in 1981. The rising effective tax rate on business has inhibited capital investment.

Innovation through new capital investment is strongly influenced by the level of retained business earnings and the expected real rate of return on investment. Unfortunately, since the early 1970s, high rates of inflation have reduced the incentive to invest in new plant and equipment because allowable depreciation of existing plant and equipment is based on historical cost, which in a period of rapid inflation is much lower than the replace-

[1] J.R. Norsworthy and M.J. Harper, *The Role of Capital Formation in the Recent Slowdown in Productivity Growth*, U.S. Department of Labor, Bureau of Labor Statistics Working Papers, January 1979.

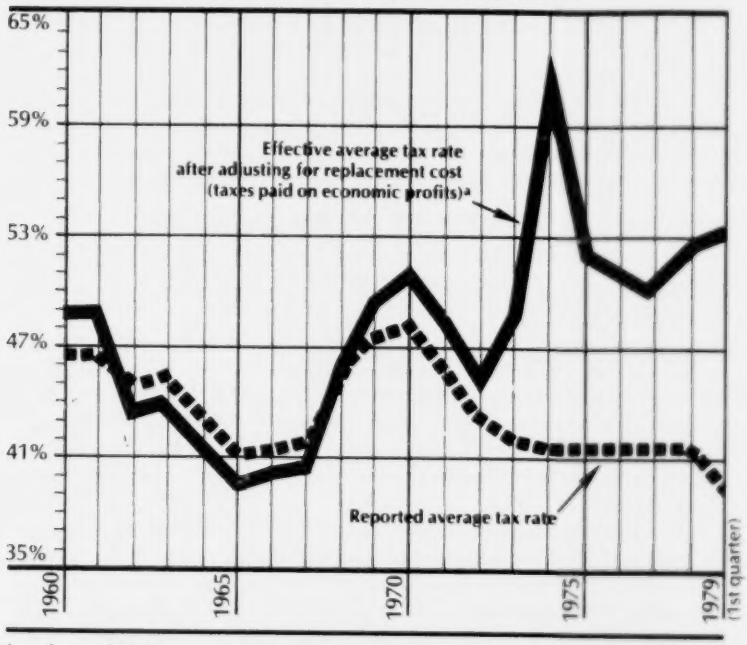
*See memorandum by ROBERT R. NATHAN, page 68.

ment cost. In addition, the book values of inventories reflect a capital gain that is not an actual economic gain. As a result, taxable profits are higher than true economic profits. An important implication of this adverse effect of inflation is that the effective corporate tax rate in an inflationary period is considerably higher than the reported average corporate tax rate.

Figure 2 compares the trends in reported and effective corporate tax rates since 1960. It is quite clear that the high inflation rates during the pe-

FIGURE 2

Impact of Inflation on Effective Corporate Tax Rate, 1960 to 1979



[a]In order to take into account two inflationary effects, the following adjustments are made: (1) Before-tax profits are reduced by the increase in depreciation that would result if plant and equipment were valued at replacement cost rather than original cost (capital consumption allowance), and (2) the capital gain from the increase in inventory prices due to inflation is eliminated.

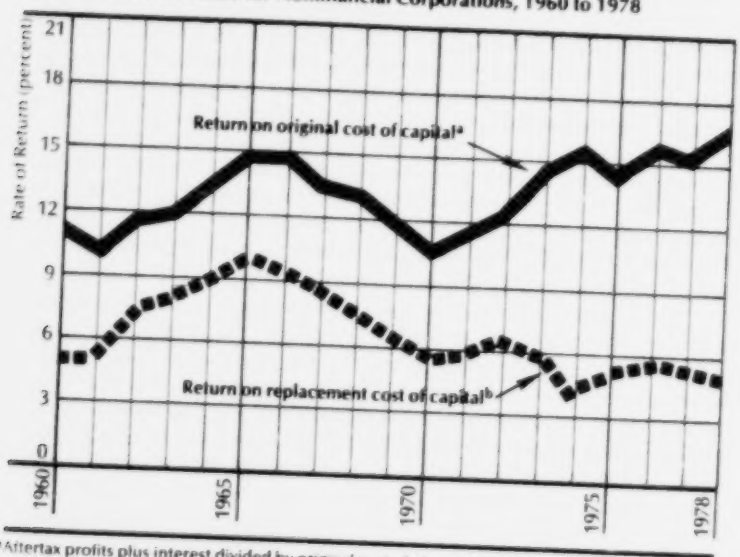
SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis.

riod from 1973 to 1975 caused a significant rise in the effective tax rate and had a detrimental impact on investment in new plant and equipment. Since 1977, the effective tax rate has again started to rise. If inflation continues into the 1980s, especially if it is accompanied by a recession, the recent increase in capital investment will surely fade once again; and consequently, the rate of technological innovation and productivity improvement will be adversely affected.*

The rate of return on investment for U.S. nonfinancial corporations is equally discouraging for future technological innovation. The real economic rate of return is the return on total capital investment (equity and

FIGURE 3

Trend in Return on Total Capital Investment (Original versus Replacement Cost Basis) for Nonfinancial Corporations, 1960 to 1978



[a] Aftertax profits plus interest divided by original cost of plant and equipment.
[b] Aftertax profits plus interest minus capital consumption allowance and inventory gains divided by replacement cost of capital.
SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis.

*See memorandum by MARK SHEPHERD, JR., page 68.

long-term debt) when investment is measured on the basis of the replacement cost of capital. Figure 3 shows that since 1960, the real rate of return based on replacement cost has been lower than that based on the historical cost of capital. Between 1960 and 1965, the difference in these rates was about 6 percentage points with the real rate of return being about 10 percent in 1965. However, since 1970, the difference between the real economic rate of return and the return measured by historical cost of capital has widened substantially. The difference has been about 11 percentage points, and the economic rate of return on total investment has declined to about 5 percent.

The willingness of business to invest in innovation depends on the expectation of a reasonable real return on the investment. Consequently, the recent trend and the low level of the return are not encouraging for future technological progress. **We believe it is essential that the government quickly adopt tax policies which increase the return on investment and stimulate future economic progress.**

This Committee believes that correcting disincentives in the tax system should be a major component of a comprehensive strategy for stimulating technological change.* **We conclude that there is an urgent need for more rapid capital recovery allowance as the number-one priority measure to stimulate investment in new plant and equipment.**** We support the intent of current legislative proposals to shorten the capital recovery period for tax purposes, rather than to hold to the traditional concept that requires depreciation to be spread over the entire useful life of an asset. In order to overcome some of the investment disincentives caused by inflation, investors should be permitted capital write-offs that approximate the rising costs of replacing their plant and equipment.***

Certain special tax measures are also needed to make investment in research and development more attractive. At present, tax provisions allow a deduction for depreciation of buildings, equipment, and other depreciable property used in R & D facilities that is equal to the deduction permitted on nonbusiness assets. **These depreciation provisions could be amended to allow flexible depreciation of all such R & D assets in order to take into account the inherent uncertainty of the usefulness of R & D assets.** Under such a system, the taxpayer would have the option of depreciating these assets fully in the first year of their life or adopting any other method desired while retaining the benefits of the allowable investment tax credit.

Other changes in the structure and level of tax rates may also be desirable, but such changes will have to take into account the effect on other policies concerned with inflation and overall spending.****

*See memorandum by RODERICK M. HILLS, page 69.

**See memorandum by RALPH LAZARUS, page 69.

***See memorandum by ROBERT R. NATHAN, page 70.

****See memorandum by MARK SHEPHERD, JR., page 70.

REDUCING REGULATORY CONSTRAINTS ON INNOVATION

Regulatory policy changes are needed to make investment in innovation more rewarding. Although it recognizes that some government regulation of economic activity is necessary, the Committee has found that in many cases substantial compliance costs are significantly reducing the resources available for the technological innovation that increases productivity. Zero-risk goals, requirements for the use of best-available technology, and the frequent changes in production standards that are sometimes required have all contributed to escalating compliance costs. In addition, regulatory delays and court challenges to the legality of regulatory policies have reduced the rate of innovation. The resulting uncertainty about the acceptability of advanced technological applications has reduced the probability of any future gain from investments in innovation.

Although many of the goals of regulation are laudable, excessively detailed rules and specifications are too often used to carry out regulatory policies. Realistic performance standards should be set, but businesses seeking the most cost-effective method of production should be allowed the freedom to meet those standards in their own way.

CED's recent policy statement *Redefining Government's Role in the Market System*[1] calls for improvements in the congressional oversight process to curtail unjustified regulations and to reshape those that are justified. It urges that regulations be evaluated for their impact on the economy. On the basis of that analysis, the Committee places a high priority on the need to consider the impact of regulatory policies on technological innovation as a means of achieving the nation's economic objectives. We therefore support the efforts of the Administration and Congress to achieve regulatory reform.

We especially encourage the development of guidelines for determining whether new or existing regulations are needed and of periodic after-the-fact reviews of both the effectiveness and the economic impact of all forms of regulation. A systematic process for accomplishing these purposes is set forth in *Redefining Government's Role in the Market System*.

REFORMING PATENT POLICY

The patent system was designed to stimulate industrial innovation. The protection provided by patents encourages the investment of funds not only in research and development but also in facilities to commercialize the R & D output. We propose a number of changes in the system that should

[1] For a more extensive discussion of recommendations on regulatory policy, see Chapters 6 and 7 of *Redefining Government's Role in the Market System* (1979).

increase its effectiveness and strengthen its supportive role in the innovation process.

One key area of improvement deals with the *resolution of disputes* over issued patents. The cost and time currently required to resolve contested situations seriously detract from the prompt and effective functioning of the system. Three changes are suggested. First, arbitration should be endorsed by statute as an acceptable way of settling patent controversies. Second, a single court of appeals for patent cases should be established to provide nationwide uniformity in the patent law. Third, a statutory reexamination procedure should be instituted which, at the request of parties other than the patentee, enables the Patent and Trademark Office (PTO) to strike obviously invalid patents from the rolls.

The *timing of the patent grant* is crucial to its reliability in business planning. Here, two changes are important. First, to protect innovation adequately in fields subject to government regulation, a procedure should be established providing for an appropriate adjustment in the patent term when commercialization is held up because of regulatory delay. Second, to prevent extended controversies and long delays in the issuance of patents when two or more inventors claim the same improvement, the nation should change to a first-to-file system, whereby the first inventor to file a patent application would receive the patent. (A personal right of use could be preserved for anyone filing later who in fact invented first and took steps leading to commercialization.) Under such a system, the ownership of all patents would be determined promptly, and the public would benefit from early publication of the patent disclosure.

DIRECT FEDERAL SUPPORT OF RESEARCH AND DEVELOPMENT

The very large program of federally supported research and development is extremely important to industrial innovation. The Committee favors moves toward increased government support for basic research, but we recommend that federal involvement in selection and management of technological development aimed at commercial application should be undertaken only under extremely limited circumstances. Specific criteria for such decision making are proposed in Chapter 7.

STRATEGY FOR TECHNOLOGY IN THE U.S. ECONOMY

This Committee believes that an increased rate of technological progress in industry is essential to achieving the nation's economic and social objectives. But although technological innovation can contribute broadly to future economic strength, business confidence in the future of the economy is a prerequisite for an adequate level of private investment in the

longer-term, high-risk ventures that lead to innovation and its diffusion throughout the economy.

High and uncertain rates of inflation have severely constrained the nation's real economic growth. One of the underlying causes of this country's persistent inflation is its low rate of productivity improvement. Productivity can be significantly increased through the more rapid application of advanced technology in industrial processes. In our view, stimulation of a higher rate of investment in the economy's productive base will create more rapid technological progress and at the same time have a lasting impact on productivity improvement and inflation control.

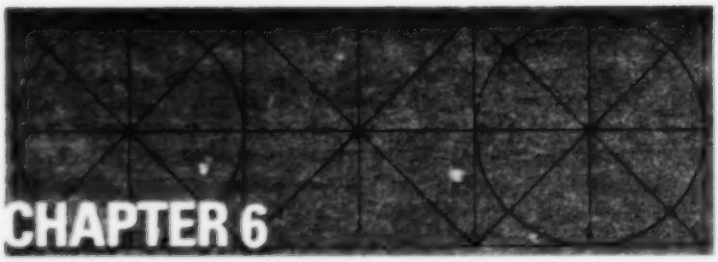
Our strategy has three principal elements:

- First, the level of investment in plant and equipment should be raised in order to increase the diffusion of new technology into industrial processes. This would provide the structural change necessary for permanent impact on productivity growth and thereby on the control of inflation. We recommend that this be accomplished immediately by removing certain existing tax disincentives (which are discussed in Chapter 4).

- Second, nonessential regulatory constraints on, and uncertainties inherent in, productive investments should be reduced.* This, in conjunction with the improved economic performance that will result from more rapid productivity growth, would create the essential climate in which investment in all phases of technological innovation would be increased as the natural response of the entrepreneurial process. (These steps are discussed in Chapter 5.)

- Third, appropriate tax, patent, and regulatory changes should be made to provide support to foster private research and development. In addition, adequate support of basic research should be a high-priority item in the federal budget.

*See memorandum by D. C. SEARLE, page 71.



CHAPTER 6
PATENTS AND THE INNOVATIVE PROCESS

Patent law is one of the three branches of law that regulate the ownership and use of intellectual property. Trade secret law and copyright law are the two other branches. In the field of technology, patent and trade secret laws overshadow copyright laws.

Intellectual work can be owned and can otherwise assume the elements of property only to the extent provided by law. This characteristic of property, the "appropriability of exclusive rights" to innovative work, largely determines whether such work is reproduced on a commercial scale. If the results of innovative work were freely available to all who might copy or steal them, there would be little reason to invest in research and development. The property rights created under the patent and trade secret laws are thus important, perhaps often essential, to the willingness of prudent businessmen to sponsor research and development and to invest in the facilities needed for innovative products.[1]

There are a number of key distinctions between patents and trade secrets. A patent owner has rights superior to those of a second inventor who makes the same invention; whereas a trade secret proprietor has no rights

[1] Although patents generally play an important role in stimulating technological progress, their importance varies among different types of technology. Because of the nature of some technology, the patent may not provide an effective property right.

against a later discoverer of the same trade secret. U.S. patents run for a term of seventeen years from the date of the grant; whereas the life of a trade secret is indeterminate. Patents are obtainable only through disclosing to the public the invention and the preferred manner in which it is practiced; whereas trade secrets depend for their existence on being known to only a few. Thus, if an invention is ascertainable from a product as sold, the only real protection available is through the patent system.

An efficient patent system meets three criteria: The first is accessibility; the system should be simple, inexpensive, and available to everyone. The second is reliability; the system should allow a person who receives a patent, as well as those who are asked to respect the patent, to know the bounds of the protection and to rely on the patent's ability to stand up under litigation. The third is selectivity; the system should protect and encourage significant discoveries without burdening the public with patents on minor and obvious variants of what was previously known. The inventive contribution must be worthy of the protection provided by the government.

A patent is sometimes regarded as a limited monopoly, but in fact, that is rarely the case. Usually, a patent covers only a specific product, product feature, or process in such a way that unpatented design alternatives almost always exist.

ROLE OF PATENTS

Patent laws (and trade secret laws, when applicable) make developed technology a controllable property. The ability to control a new technology as property determines in large measure whether new-technology development will be undertaken at all.

Patents reward the innovator in a number of different ways. One use of patents is licensing, under which others are permitted to practice the invention in return for royalty payments. Patents are also used to reserve a particular product feature or process for the exclusive use of the patent owner, although probably not so often as is commonly believed. Occasionally, patents are used as trading stock for freedom to operate under the corresponding patents of others.

Another common role of patents is to provide the basis for acquiring counterpart patents in other countries for use in connection with product sales in those countries. Where export sales may be impractical, patents can be used to support licensing in foreign countries.

The number of U.S. patents issued annually has reached a plateau of approximately 75,000. However, the patents issued to foreign corporations have been increasing for some time by more than 1,000 patents a year and are nearing an annual level of 30,000 patents. In 1977, 37 percent of all

U.S. patents issued were granted to foreigners. There has been a steady and noticeable decline in U.S. patents issued to U.S. residents.

There is an obvious correlation between patents granted and research and development undertaken. The recent decline in U.S. patents issued to U.S. residents may be due to the fact that although total R & D activity has not decreased, work in potentially patentable areas has fallen off. Diversions of technology to such areas as environmental protection, energy conservation, compliance with certain government requirements, and development of computer software have had an adverse effect on the output of new patents. Diversion of technology to short-range needs from longer-range, more creative work has also been cited as a cause of the decline.

CHANGES IN PATENT POLICY TO ENHANCE THE INNOVATIVE CLIMATE

There are several possible ways in which the contribution that the patent system makes to invention and innovation processes can be enhanced.

FIRST-TO-FILE PATENT SYSTEM When two or more applicants seek a patent for substantially the same invention, the U.S. patent system provides for interference, a procedure to determine who first made the invention. That party will be entitled to the patent to the exclusion of those who invented later. The interference starts out as a quasi-judicial proceeding in the Patent and Trademark Office (PTO) and occasionally reaches the federal courts as full-scale litigation.

Patent interferences are highly technical proceedings and are of questionable efficacy in determining the first inventor. Much time is spent proving what happened before the filing dates, trying to prove that the inventor was incorrectly named, did not really have the invention in hand, failed to discharge various obligations, and so on. In a significant majority of interferences, the patent is eventually awarded to the first to file.[2]

The United States and Canada are unique among all the industrial countries of the world in utilizing the interference approach. European countries have always considered that a patent should go to the first party to file an application. The new European patent system, which all European Economic Community countries have now adopted, provides a personal defense to the individual who can show he was actually the first to invent and took steps toward use. (Participants in this system include the United Kingdom, France, West Germany, and Holland.)

2/ According to a survey by a major corporation, although approximately 110,000 U.S. patent applications are filed each year, only 75 to 80 interference procedures produce a result different from the first-to-file system.

Because the purpose of the patent system is to encourage disclosure to the public, the party who is first to file should be rewarded. Adoption of a first-to-file system would eliminate patent interference proceedings, simplify patent litigation, make patent validity more certain, and serve the interests of the inventor and the public in a more efficient manner.[1]* Most objections to the system could be answered by provision to grant a prior inventor a personal right to use the invention. Such a right would be contingent on not having abandoned the invention and should require proof of steps taken toward commercialization.

REEXAMINATION OF PATENTS When considering patent applications, the PTO frequently does not take into account all relevant prior patents or other background material. In the relatively short time that patent examiners have to search for pertinent information, they cannot be expected to find all the prior references, particularly those from foreign countries, that potential defendants in infringement suits may be able to uncover. At present, a patent owner faced with new references brought forward by an infringer can ask for a reissue of the patent to overcome those references. The reissue patent is a substitute for the original patent and expires on the same date as the original, but the scope of its coverage is usually different.

This system should be continued and encouraged. Anyone opposed to the reissue, either wholly or in part, has the opportunity to submit references and to present written arguments. That practice, too, should be continued. We do not suggest that a full adversary proceeding be established in the PTO; such a system would increase both the time and expense involved in the reissue proceedings.

If the patent for which reissue is sought is already in the courts, the judge should retain the discretion to stay the action and allow for the reissue. Such a procedure may often allow for greater certainty in the proper coverage of the patent and consequently reduce the amount of judicial time required. On other occasions, the reissue procedure may be insufficient because oral testimony, for example, may be essential to explain the references and other background matter submitted by the defendant. In such cases, the judge might properly refuse to stay the suit. **We believe that the present procedure is reasonably satisfactory insofar as the patent owner is concerned and that it should not be changed with respect to their opportunities.**

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[1] The pharmaceutical and agricultural chemical industries have questioned the applicability of the first-to-file system. They believe that the present system is preferable in their businesses, given the extensive testing required to prove practical results.

*See memoranda by J. PAUL LYET and MARK SHEPHERD, JR., page 73.

However, a new right should be provided to defendants or potential defendants faced with adverse patent claims. **If defendants feel that their references are strong enough to invalidate the patent without the need for, or expense of, a trial, we recommend he should have the opportunity to take his references to the PTO and ask for reexamination of the patent in light of those references.** In other words, the defendant should be able to call for a PTO action (akin to the reissue proceedings) that might result in a PTO decision that the patent should not have been granted. In certain situations, particularly when patents without merit are involved, such proceedings would save the time and expense of a trial. To that end, the judge should have the discretion to stay any trial proceeding pending the outcome of a PTO reexamination requested by the defendant. The reexamination procedure should require that the person requesting it pay fees that will approximate the PTO costs involved.

In recent years, the concept of a reexamination of issued patents appeared in various congressional bills, some of which have been supported by the American Patent Law Association; the Patent, Copyright and Trademark Section of the American Bar Association; the New York Patent Law Association; and others. **We support the efforts of Congress to improve this feature of patent policy[4] and believe that a reexamination procedure will increase certainty in the patent system at a relatively modest cost to all involved.**

ARBITRATION OF PATENT DISPUTES Commercially important patents often invite controversy. Competitors interested in the patented product or its equivalents frequently disagree with the patent owner concerning its true scope and value. A suit in the federal courts may result. Protracted pretrial procedures and the difficulties of dealing with technical subjects tend to make the litigation very expensive, often $500,000 or more for each party.

Patent litigation itself is also protracted. A suit on an important patent will commonly take years to resolve. The cost and time required for litigation detract from the ability of patents to foster innovation. The cost of enforcing patents may very well influence business to invest in programs that are less risky than the research and development needed for innovation and productivity gains.

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[4] Through proposed rules published as 43 Fed. Reg. 59401 (December 20, 1978) and later withdrawn, the Commissioner of Patents and Trademarks raised the possibility that a limited reexamination procedure could be established in the PTO based on his rule-making authority. However, we believe a statute is needed because the commissioner cannot provide for court review of PTO decisions or authorize cancellation of patents found to be invalid, features that are required for an acceptable reexamination system.

The patent owner shoulders the burden of detecting infringement and enforcing the patent through civil action in a federal district court. The federal courts have not been inclined to share their exclusive jurisdiction over patents because the validity of a patent appears to hold such public interest that settlement of a controversy through arbitration is inappropriate. The cost of enforcing or defending against a patent in court could amount to several hundred thousand dollars for each party. To reduce the cost and time required for the resolution of certain patent disputes, arbitration should be available for those who wish to use it. **We believe that arbitration should be a legitimate method for solving patent problems.** Arbitration is common in resolving disputes in almost all other commercial areas, including very large labor settlements, and it is difficult to see why it should not be allowed for patent questions.

Although compulsory arbitration cannot be required because such a requirement would be a violation of due process, it should be available when both parties wish to use it voluntarily. The results of arbitration are, of course, binding only on the participants. **We therefore recommend that public policy be modified to permit voluntary arbitration of patent disputes, including questions of both infringement and validity.**[5]

ADDITIONAL RECOMMENDATIONS ON PATENT POLICY

This Committee believes that a number of additional changes in patent policy would contribute to greater innovation in the U.S. economy. Many of these changes may appear quite minor in themselves, but their combined effects on future innovation could be quite substantial. These recommendations and the analyses supporting them are discussed in Appendix B "Supporting Analyses for Additional Changes in Patent Policy."

In summary, this Committee recommends the following additional patent policy changes:

- A single patent appeals court should be established to eliminate the current problem of inconsistency in precedents between existing Circuit courts.
- The recommendations of the 1978 National Commission on New Technological Uses of Copyrighted Works should be implemented to provide legal protection to the authors of computer programs and to

[5] To our knowledge, very little data on arbitration in patent cases exist. However, information provided by the American Arbitration Association shows that in a sample of 200 commercial arbitrations in the construction field, it averaged less than four months from filing to issuance of an arbitrator's award. The savings in time and money would be substantial if anything like this could be attained in patent cases.

assure that rightful processors of copies of computer programs can use or adopt those programs for their own use.

- U.S. owners of patented processes should be able to enforce their patents against goods made abroad with those processes and then imported into the United States.
- A patent owner should be able to receive an extension of a patent's life equal to the length of government regulatory delays.
- So that government-funded research and development will be used for commercial products, government contractors should in most instances receive title to the inventions and patents made under government contract.
- Government-owned patents should be licensed to all domestic manufacturers on a royalty-free basis.*

The Committee also feels that given the PTO's importance in the innovation process, it is vital to provide adequate funding to eliminate the unnecessary backlog in the work of that office.

Proposals for *mandatory licensing* of government patents and the *reimbursement of government seed money* when commercialization of patents that received government assistance is successful do not appear to us to have any merit. We also reject the concept of *periodic maintenance fees during the life of patents* as a means of reducing the number of worthless patents that continue on the rolls since there would be no positive effect on domestic industrial innovation and foreign competitors might be assisted in U.S. markets.

There are two features of patent policy that we believe deserve examination in future policy development. First, the concept of *shorter-term lesser patents*, which is used in Germany and Japan, should be considered for future introduction in the United States. Such patents are designed to protect minor advances in technology and are worth evaluating. Second, although the Committee offers no specific policy recommendations on how to improve *patent protecton in Third World countries*, we do believe that the government has a responsibility to work with other industrial countries in dealing with this potentially important issue. We believe that the United States should encourage, where appropriate, the establishment of effective laws to protect property rights in inventions and innovation while avoiding any improper interference in the affairs of other countries. This should include the establishment of effective patent laws in Third World countries.

*See memorandum by JOHN D. GRAY (Omark Industries), page 74.

APPENDIX B

SUPPORTING ANALYSES FOR ADDITIONAL SUGGESTED CHANGES IN PATENT POLICY

The analyses in this appendix supports the suggested changes in patent policy outlined in Chapter 6.

SPECIAL PATENT APPEALS COURT

Honest irreconcilable differences occasionally dictate the need to litigate patent questions. Unfortunately, there are sometimes material differences in legal precedents about patents among different judicial circuits. The precedents in one circuit may indicate a favorable result for the plaintiff, but the precedents in another circuit may not. Because the result of the litigation can be affected or even determined by the circuit selected, the selection process, including the practice of the parties attempting to select the circuit that will be most favorable to their point of view, frequently becomes a major added complication.

We recommend a single court of patent appeals. Such a court would help eliminate much of the costly procedural maneuvering at the early stages of patent litigation now devoted solely to selection of the forum. A single court of appeals would also contribute to greater certainty in the predicted outcome of patent litigation. That is, a single court would tend to develop a more cohesive body of precedents than the many independent circuit courts do and might reduce the number of patent suits brought.

Although there might be difficulties in the handling of issues ancillary to patent validity and infringement, we believe that a single court would contribute far more to the value of the patent system than it would detract from it.

COMPUTER SOFTWARE PROTECTION

An increasing proportion of money invested in research and development is being applied to the information processing field. The resulting computer programming (software) has not been afforded the same legal protection given to other technology. Although some software may find limited protection under the patent system or copyright, much appears to be protected by its owners as trade secrets.

There have been numerous recommendations that the present copyright statute be amended to protect computer programs. One such amend-

ment is set forth by the National Bureau of Standards and the National Commission on New Technological Uses of Copyrighted Works, which made the following recommendation to the President of the United States on July 31, 1978:

> The new copyright law should be amended (1) to make it explicit that computer programs, to the extent that they embody an author's original creation, are proper subject matter of copyright; (2) to apply to all computer uses of copyrighted programs by the deletion of the present Section 117; and (3) to assure that rightful processors of copies of computer programs can use or adapt these copies for their use.

We urge that the recommendation of the National Bureau of Standards and the National Commission on New Technological Uses of Copyrighted Works be implemented.

PROTECTION OF PROCESS PATENTS AGAINST IMPORTS

A problem of patent enforcement which may discourage investment in process development, is the powerlessness of a United States patent over products produced abroad by that process and brought into this country. A proceeding currently before the U.S. International Trade Commission may lead to the exclusion of such goods, but it has not proven satisfactory to many patent owners. Unlike the United States, other major countries do allow a process patent to be enforced through an infringement suit against foreign-made goods brought into the home country of the patent.

In order to encourage investment in process innovation, we believe that patent owners should be able to enforce patents against goods made abroad by use of the patented processes and then imported into the United States. Such a right would not bar the importation of identical goods not made by the patented process, but would secure to the patent owners what should be rightfully theirs.

ADJUSTING TO PATENT TERM
OF GOVERNMENT-CAUSED DELAYS

Government regulatory delays in clearing products for commercialization often shorten the effective life of a patent and undermine its value. This is particularly true in the cases of agricultural chemical products (which must be registered by the EPA) and pharmaceutical products (which must be cleared by the FDA). It is also true in other fields, for example, in the electronics industry in connection with the standardization of a particular color television system by the Federal Communications Commission.

The reduced values of such patents occur because, in many cases, the patent becomes effective a number of years before the products themselves can appear on the market. Thus, the patents expire relatively early in the commercial lives of the products, which enables potential infringers to get into the field quite soon without having to design around the patents or develop competing new products. Furthermore, the time in which the innovators of the products can recoup their investments is shortened.

In our opinion patent owners should be able to receive extensions on their patent equal to any government regulatory delays. To provide balance, there should be some maximum length of time for any extension as well as a precise definition of the kinds and causes of regulatory delays that might qualify patents for extensions. An alternate approach would be to allow patent owners to delay the effective date of their patent protection until any necessary government approvals for marketing the patented products are obtained.

GOVERNMENT CONTRACTOR POLICY

Until the 1970s, much (if not most) of such federal funding was spent on military and space programs. In recent years, there has been a growing emphasis on development programs in other areas, such as energy. It is clearly in the national interest that the technology developed by federal funding be made available for use by private industry in providing products and services for the general public. In many areas of government, however, patent policies have been instituted either through statute or through agency rule making, which seem to discourage commercialization of the results of federally funded research and development.

Experience has shown that the company handling the government contract is most likely to carry the results of government-funded research and development to the marketplace. If the contractor must turn the rights back to the government or if competitors can quickly copy the product (e.g., by reverse engineering) without any patent deterrent, there is much less reason for the contractor to risk funds in commercialization. The same principle applies to the results of government-funded research and development done by nonprofit contractors such as universities. Unless the universities get substantial rights from patents, there is absolutely no incentive for them to establish technology transfer and patent programs that may lead to commercialization of the research.

To encourage the use of government-funded research and development for commercial products, contractors should, in most instances, receive title to the inventions and patents made under government contract. However, the government should be able to require the contractor to li-

cense others in certain circumstances (e.g., if the contractor fails to produce enough products to supply the market).

In some instances, it may be best for the government to take the title. For example, a regulatory agency may fund a development and then adopt it as a national standard for commercial products. To prevent economic dislocation in such a case, it is desirable that all competitors receive the same royalty-free right to use the required technology or feature.

Government patent policy could be further extended to improve procedures through which the government can more promptly and more readily recognize valid patents bearing on government activities. It is also important to discourage any contracting practices needlessly tending to appropriate privately developed rights of the contractor in existing patents or data.

GOVERNMENT-OWNED PATENTS

A substantial portion of government R & D funding goes to support laboratories and other activities that are integral parts of government agencies. The unclassified technology developed by these laboratories has normally been patented, presumably to make sure that it becomes known to the public.

However, the administration of such patents presents a situation that is conceptually less straightforward than administration of patents generated from contractor-developed technology. Not having developed the technology, the commercially oriented engineers are likely to have, or at least to envision, different ways of accomplishing the same end. Thus, there is at least some question whether internally generated government patents serve as an effective tool for commercialization.

Such patents can certainly discourage manufacturers if they fear that the government will claim that they have the patent right to the product or process. **The best course is probably to license the internally generated government patents on a royalty-free basis to all domestic manufacturers.** In that way, the patents would serve to publish the technology and at the same time would not deter commercialization. (The patents could, however, serve to protect efficient domestic production from foreign dumping; and in the rare instance where exclusive licensing might be needed to elicit money for commercialization, such licensing could be contemplated.)

In many instances government patents are taken out solely for defensive reasons (i.e., to publish results of the technical work without any thought of the patents having commercial value). In view of the very large number of patent applications filed by the government each year on inventions made by government employees (averaging 1,332 applications a year for fiscal years 1963 to 1975), we believe that the work load of the PTO

could be substantially reduced if this so-called defensive filing were eliminated by the government agencies.

We suggest the establishment of a technical journal for the publication of selected government inventions. Such a journal would publish descriptions of those inventions on which patents are not needed for national security purposes. In this way, the government would be protected against adverse claims by later inventors, the technology would be made available to interested parties, the government inventors would receive recognition, the PTO work load would be greatly reduced, and the government patenting costs would be decreased.

Mr. LINDSAY. Given this morning's discussion, and particularly the comments of the chairman, I would simply like to make a few general observations, not from the standpoint of an expert in patent and licensing, but rather as an executive of a high technology company that has had the opportunity to observe the process of technological transfer and its use in advancing the economy.

I believe your objectives in this bill, as I understand them, are quite consistent with CED's own objectives in this area.

The transfer of technology from those who develop it to those who use it is an incredibly complex and difficult process. And that is true whether it is within a single company or among or between companies.

Patents are only one part of this process. And the patent policy must be viewed as an integral part and consistent with the broader objective of increasing the effectiveness of technological transfer.

Therefore, negative incentives must be removed to the maximum degree and positive incentives must be maximized. In other words, make this process as simple as possible.

Minimize the role of a third party in this process of transfer—and by that I mean the government agency or any other third party—with the objective of getting the people who develop the technology in as close and intimate contact and communication as possible with the people who intend to use it.

Equity, I think, is important. But I believe it can be carried too far, to the point where it creates serious obstacles to the effective transfer of technology and the advancement of the economy.

And I would only say in concluding of these general observations: Use the profit motive to the maximum degree. It is there to be used. And I think the economy will profit from it and in turn all of society will profit by achieving the objectives which you have set forth in trying to maximize the effective transfer of technology.

I would be glad to answer questions. But I think these are the points that I can add, while the others in the panel are far more competent in the specific fields of patents and licensing.

[The prepared and summary statements of Mr. Lindsay follow:]

TESTIMONY

of

FRANKLIN A. LINDSAY

Chairman, Itek Corporation
and
Chairman, Research and Policy Committee
Committee for Economic Development

on

H.R. 5715, Uniform Federal Research and Development Utilization Act of 1979

and

Administration's Proposed Bill,
Government Patent Policy Act of 1980

before

COMMITTEE ON SCIENCE AND TECHNOLOGY
SUBCOMMITTEE ON SCIENCE, RESEARCH AND TECHNOLOGY

UNITED STATES HOUSE OF REPRESENTATIVES

February 8, 1980

My name is Franklin Lindsey and I am Chairman of Itek Corporation and Chairman of the Research and Policy Committee of the Committee for Economic Development. As you know, CED is a nonprofit organization of 200 trustees, including many corporate executives and university presidents.

I welcome this opportunity to testify. CED has just recently issued a major policy statement on Stimulating Technological Progress. In it, we have proposed an overall strategy to reverse the declining trend in innovation in the U.S. Among the remedies we recommended for this comprehensive approach are increasing innovation through the market economy; raising investment in new plant and equipment through tax policy changes; reducing regulatory uncertainties and constraints; and directing Federal R & D support toward basic research. These proposals may be the subjects of future hearings before this committee and others.

Improving the effectiveness of the patent system is another vital part of the CED proposals. One of the major conclusions of the CED policy statement is that the current patent system falls short of what was meant to be its number one objective: providing effective incentives for developing new inventions and encouraging the utilization of the successful results of research and development. I understand that you have been provided with a copy of Stimulating Technological Progress. With your permission Mr. Chairman, I wish to submit for the record, the summary recommendations and the chapter and

appendix of the CED policy statement which deal with patent policy's role in the innovation process.

Mr. Chairman, both H.R. 5715 and the Administration's proposal are aimed at the utilization of the results of government-funded R & D. We applaud the intent of these bills. Our own study convinced us that change in this direction was necessary. Several major features of these proposals call for further comment.

1. The Need for a Consistent Patent Policy to Encourage the Utilization of Government-Funded R & D

It may not be immediately obvious that title to inventions made during the course of work on government contracts should not go to the government. However, there are compelling reasons why it is highly desirable to vest title with the contractor that makes the invention.

Government funding of R & D can have a significant impact on future innovation and the productivity of the economy. While R & D is an essential component of the innovation process, if technology stopped at the R & D phase society would gain comparatively little from this rather large investment of public funds. R & D efforts account for a relatively small proportion of the total cost of bringing new products and processes to the marketplace. The non-governmental sector must invest many times the R & D costs in order to commercialize the results of successful federally-funded R & D. At the present time the inventor's rights under a government R & D

contract vary among government agencies and departments. This confusion and uncertainty leads to a disincentive to firms which may wish to invest the funds necessary to commercialize a federally developed invention.

Experience has shown that the entity most likely to carry the results of government-funded R & D to the marketplace is the contractor itself. If the contractor will be subject to a claim by the government under the patents, and/or if its competitors can quickly copy its product (as by reverse engineering) without any patent deterrent, there is much less reason for the contractor to risk its funds in commercialization. The same general principle applies to the results of government-funded R & D work done by nonprofit contractors, such as universities. Unless the universities obtain substantial rights from patents, there is absolutely no incentive for them to spend funds to establish technology transfer and patent programs which may lead to commercialization of the research.

Similarly, if the contractor is an individual scientist, he or she will be discouraged from risking the additional personal time, money and effort it would take to commercialize a new idea in the absence of clear-cut patent rights and the attendant possibility of personal reward.

I suspect there are substantial commercial possibilities lying undeveloped because of our over-zealous government restrictions in this field. In the process of trying to keep contractors from profiting from ideas born in the course of government contracts, we are probably

preventing the development and distribution of innovations that could benefit all of society.

2. The Need for Uniform Treatment of All Types of Contractors

In both H.R. 5715 and the Administration's proposal there are several features of the proposed policy changes which make a distinction between small businesses and nonprofit organizations, and other contractors. This type of differential treatment does not seem to us to be desirable. Government patent policies should build on the profit motive no matter what the class of contractor, for it is the expectation of profits (or licensing income, in the case of the universities) which will encourage the investment in private funds necessary to commercial programs. There is no question that current patent policy poses problems for small businesses, but on the basis of the CED policy statement we do not believe their problems are unique in the area of patent rights under government contracts. We would therefore suggest that Congress and the Administration reconsider the following features of the proposed policy changes:

In the Administration's proposal, we are especially concerned that the granting of title under a government contract is only given to nonprofit organizations and small businesses. Title to inventions made under contract for all other contractors will be held by the government. In our view this would lead to several disadvantages.

(a) We strongly believe that this distinction among institutions (Administration Proposal, Sections 202 and 203) will, for most government contracting, inhibit the commercialization of any attendant new inventions and discoveries. In practice, the goal of commercialization is always easier to achieve if the firm has the option to license the patent with other firms. We believe that to encourage the use of government-funded research and development for commercial products, contractors should, in most instances, receive title to the inventions and patents made under government contract. However, the government should be able to require the contractor to offer licenses to others in certain circumstances (e.g., if the contractor fails to produce enough products to supply the market or if he does not actively pursue some applications that would significantly benefit the public).

(b) Because the Administration's proposal fails to provide most contractors with title to the invention, that proposal necessitates the development of a complex system for determining under what conditions the government will grant a contractor a license to commercialize the invention. For example, determining the potential "fields of use" (Section 201) will be difficult for contractors. All of the "fields of use" are rarely known at the time a discovery is made. Determining the "fields of use" will inevitably lead to lengthy discussions with the government before both parties agree

to the definition of these fields. In our opinion, this will lead to unnecessary delays and will increase the cost of administration to both the contractors and the government.

Mr. Chairman, we therefore believe that the approach taken in H.R. 5715 which provides title to all contractors is the best approach and is the most effective way of ensuring that the results of R & D will be brought to the marketplace for the benefit of the public.

3. Contractors' Payments to the Government

Conceptually, perhaps it is possible to make a case for the contractor to repay the government some part of the funds the government supplied when the original contract resulted in a successful invention. Section 318 of H.R. 5715 attempts to recognize the merits of this case.

It seems to us, however, that any such "recoupment" proposal is likely to impose direct costs on the government which amount to more than the revenue it produces for the government and additional costs on contractors. Any recoupment proposal could also be counterproductive in the sense that it may create an unnecessary disincentive to commercialize an invention. We therefore believe that it would be undesirable and

probably administratively impractical to apply a royalty on the future profits from an invention as implied in Section 318 of H.R. 5715.

It will be extremely difficult for contractors, or the government to determine which federally supported invention resulted in a specific increase in profits. This is especially the case when the invention results in a new process. But even in the case of a new product, more than a single patent is frequently involved in a complex production process which involves considerable management and labor know-how which has nothing to do with the original federally-funded invention.

Mr. Chairman, we recognize the intent of Section 108 but would ask you to reconsider whether it is desirable to try to design and implement a cost recoupment procedure for successful inventions. After all, the present corporate and personal income tax system practically makes the federal government a 50-50 partner in any successful enterprise. By striving so hard for the last of dollar recoupment, the government may forestall more revenue than it recoups.

4. Conclusions

Mr. Chairman, concerning other areas covered by H.R. 5715 and the Administration's draft bill, we favor provision for suitable government march-in rights and the general simplification of patent procedures.

We are also pleased that the Congress and the Administration are working towards much needed improvement in our patent policy. As we all know, however, the bills we are discussing are only a part of our patent

system. As someone who has been fortunate to participate in the growth of a small business to a successful high-technology corporation, I am fully aware of the importance of patent policy to small businesses. The cost and delay in acquiring and defending patents are especially difficult for small firms. It is for this reason that CED has urged policymakers to consider a number of other changes in patent policy, such as voluntary arbitration of patent disputes, and the adoption of a first-to-file patent system. We believe that these types of changes in patent policy will benefit all firms -- and that they will be especially helpful to small firms. Most of all, such improvements will help the American public achieve the benefits of new inventions and discoveries quickly and efficiently.

I hope you will encourage your colleagues on other committees and the Administration to quickly move forward with these broader patent policy improvements. Mr. Chairman, I thank you for the opportunity to testify today. If any of my colleagues at CED can be of any further assistance in achieving a more effective patent law, we will be pleased to help.

Mr. ERTEL. Thank you very much for your statement. I do have some questions. I will be coming back to them. I am sure Mr. Brown does, too.

But in accordance with the procedure we set out, we will continue to Mr. Manbeck, who has appeared before us previously. He seems to be either following me around or I am following him around. It seems wherever one of us shows, the other shows up.

Good to see you again.

Mr. MANBECK. Nice to see you. I would like to ask that my prepared statement be entered into the record, and then, hopefully, repeat a few words of it in this testimony.

I would like to comment, if I may, on some points which came up in the administration's testimony. I hope these comments will be helpful. And in making these comments, I am really speaking as an interested party, not necessarily as a representative of the company by whom I am employed.

A number of very pertinent questions were asked of the administration representatives, one of which is whether in their bill the difference between large and small companies can be justified for any reasons other than political.

As I understood the answers given, it seemed that the administration feels somehow that the Government can license better than large companies in unused fields but, although it was silent on this, presumably not better than universities and small companies.

Now, I would suggest to you, as Mr. Payne has already done to some degree, that large companies are extremely interested in licensing income, and probably are better equipped than anyone else in implementing licensing programs where there is in fact something to license.

The problem is that it is extremely difficult, if not impossible, to license bare patents without related technical information.

We have an operation in General Electric Co., whose task it is to license technology which is not used by the company. At one time the name of this operation was the patent and technology marketing operation. It was thought that we had many patents which for one reason or another we could not use and that they would form a source of income through licensing.

The name of the operation is now the technology marketing operation because we have found through years of experience that it is next to impossible to license a bare unused patent without technical information and help going along with it.

I don't know what the record of the Government agencies is in licensing today. But to the extent they have difficulty in licensing unused Government patents today, I suggest there is no way that their record could be better in licensing unused patents or unused fields in contractor developments—of contractor developments.

Now, another thing I would suggest is that the current Federal patent policy is not all bad. There are outstanding examples of commercialization coming out of developments initiated by the Department of Defense.

Also, the Department of Energy is working, I believe, well with contractors under a patent policy which was carefully thought out

66-321 O—80——10

and passed by Congress as part of the Non-Nuclear Energy Act, I think it was 1974.

I suggest that the committee might wish to hear from these two agencies as it thinks about what is the correct law for this Nation.

Now, suffice to say, we think that the approach of H.R. 5715 is much superior to the agency approach. We believe commercialization comes from patent title and that following a field of use approach will simply lead to a great many more administrative difficulties and problems.

Mr. Ertel and I have talked about recoupment before. He knows how I stand on that, which is against it for I think very good reasons.

With that I will close. Thank you.

[The prepared statement of Mr. Manbeck follows:]

For Release on Delivery
February 8, 1980

TESTIMONY

of

HARRY F. MANBECK, JR.

General Patent Counsel
General Electric Company

on

H.R. 5715, Uniform Federal Research
and Development Utilization Act of 1979

and

Administration's Proposed Bill,
Government Patent Policy Act of 1980

before

Subcommittee on Science, Research and Technology

Committee on Science and Technology

House of Representatives

February 8, 1980

I would like to add some details to the previous testimony, dealing particularly with the proposal for "Contractor's payments to the Government" and the need for uniform treatment of all contractors.

On the subject of contractor's payments, or recoupment, I would urge that such payments are a disincentive to the very commercial activities which the legislation is intended to promote. Payments to the government for commercial products are nothing more than a charge or tax on such products. At best, they could result in the price of the product being raised, or at worst, in the product never reaching the marketplace because of the additional cost. If the government is sponsoring research to help bring forth commercial products, it seems illogical to increase their costs.

In the case of military products which can be transitioned into commercial products, the same holds true. Moreover, in this circumstance the commercial products even lead to better and cheaper military products. If the contractor has a broader base over which to spread its fixed costs, the prices of the military products are likely to come down. But recoupment acts as a drag on transition particularly in the early stages if the transitioned products must compete against other preexisting products which are already down the experience and pricing curves.

Thus, although recoupment, on its face, may sound appealing, it will raise the cost of the new products and make it harder for them to compete,

particularly against foreign competitors in the world market. Also, as has been pointed out, recoupment on a patent-by-patent basis, or even on a contract-by-contract basis, could be an administrative nightmare.

The next point on which I would like to comment is the exclusive licensing approach adapted for most contractors under the Administration's proposed bill. This approach requires the contractor to provide a list of fields of use in which the contractor intends to commercialize the invention. At the time most inventions are first conceived, it is impossible to say whether or not they will be used. They must first be reduced to practice, then they must be tested, and next they must be evaluated in competition with many other ideas. Also, where inventions are capable of multiple uses, not all those uses are necessarily foreseeable in the beginning. Thus, it is not realistic to require contractors to state immediately the fields of use in which they will commercialize an invention. They can't do it and they should not be placed in a position where they need to speculate, if not over-commit, in order to keep an adequate patent position.

Alternatively, the exclusive license approach may lead the contractors to concentrate on one application of an invention rather than thinking in a broader scope. And it is likely to be an administrative jungle, again detracting from the very incentives which the overall government patent policy is intended to support. Patent ownership will help commercialization, but the contractor must be given title, not just a half right.

Finally, the deviation and waiver provisions of the Administration's proposal are an avenue for the continuance of the bureaucratic procedures which now impede the commercialization of inventions. This provision provides that an agency may deviate so the barn door is not even closed, let alone locked. The Congress should not leave a loophole like this if it legislates that patent ownership for government contractors is in the national interest.

Mr. ERTEL. Thank you, Mr. Manbeck. Somewhere along the line you are going to have to get on the record so other people understand why you are against recoupment.

I am going to come back to that. I notice it is a part of Mr. Lindsay's statement as well. I think that is an issue that is going to have to be resolved in this legislation somewhere along the line, something we cannot avoid. It is going to be a very dramatic political battle, and I think from the aspect of people's sense of fairness it is going to be a battle. I think it will be an issue.

Mr. MANBECK. I would be delighted to comment further when you are ready to have me do so.

Mr. ERTEL. Thank you.

Our next witness is Mr. Schellin, Small Business Legislation Council.

Mr. Schellin, do you have a written statement?

Mr. SCHELLIN. Yes, it has been submitted.

Mr. ERTEL. That will be incorporated in the record. You may summarize or read it, as you prefer.

Mr. SCHELLIN. I will read portions of it because I think it is very germane.

First, I would like to identify my constituency. I am the chairman of the board of trustees of the National Small Business Association. I am also representing the Small Business Legislative Council.

The Small Business Association represents 50,000 small business people in the United States. It is a generalist organization, so that we represent all the way from the smokestack crowd down to the Mom and Pop kind of shop.

The Small Business Legislative Council is an organization that brings together trade associations all over the country, so that together they represent 4 million small business enterprises in the United States.

I am also here today representing the American Society of Inventors which has a very substantial chapter in the State of Pennsylvania and a second chapter in the State of California. I am the chairman of their board of advisors. I am also here as the executive vice president of the National Patent Council.

All the people I represent are the people that pay for the patent system. Consequently, we are extremely interested in what is going on.

One of the problems in being the next to last speaker is that on an occasion when the administration was testifying, I wanted to

leap into the fray to provide some answers. But, of course, I cannot do that.

Perhaps someday it might be wise to have a hearing where we are all sitting around at the same time so we can interrupt each other and provide information.

One of the points I wanted to mention that was brought up during the testimony, it seems to be very difficult to latch on to the definition of small business. It shouldn't be all that difficult because you can check with the Small Business Administration and they can tell you, if you can provide the SIC classification—what I am saying is, it varies from SIC classification.

It also varies with regard to the particular program that you are inquiring about that SBA administers. But it can be done. It is not an impossibility.

The other thing that Mr. Manbeck mentioned a few minutes ago with regard to some of the Government patents that are already titled to the contractor, that is correct. What you do have, when you are a mission-oriented agency, is in fact a system of giving title to the corporations, the contractors. And I will indicate that they are usually the larger corporations.

So what you have, getting back to what Dr. Baruch said, are you referring to 27,000 patents, but that is a picked over portfolio.

Some of it is just plain junk, I wouldn't give you 2 cents for it. Some of it may be a little bit better, but not all that much.

So we are not dealing with patents that are going to be given away to large or small business that may amount to very much. I think we ought to put that into perspective before we do anything else. But it is important to small business in some aspects.

Now, why have we taken a position in this whole area?

One of the real cogent reasons that my constituency has come up with has been time and time again they have been denied title as a Government contractor simply because they are small business. They have been told so by the Government contracting officers. They have been said to:

> If you were a large business, we would gladly give you title because you guys can give us a hard time, you have attorneys that you can hire, you come up with the right magic words in order to get title. Little guys we don't have to contend with at all. If you say you are not going to do our research, we can go somewhere else.

If Mr. Manbeck's company says, I am not going to do the research anymore, there are very few places they can go to.

One other item that was brought up during the previous testimony was the simple fact of a patent as a monopoly. Please don't use that word anymore. It is not a monopoly. A monopoly occurs when I don't have the right as a public citizen to go into a relevant market and the right is taken away from me by the fact that the companies are so large that they are controlling it.

I cannot go into the business of making automobiles because of the oligopoly of the auto industry.

Now, a patent gives something to the public that the public didn't have before. A monopoly takes away something that it should have had, could have had, but it is taken away.

A patent, as you well know, Mr. Ertel, is a document which reaches an invention which the public didn't have before. So it is

not a monopoly. It is a right of exclusivity, because it does not control a relevant market.

If you are wearing a watch on your wrist which is a digital watch, I can assure you that it is patented. I am wearing a watch which is not digital, it is an old fashioned watch my wife gave to me while we were engaged, it is 26 years old, it is an old watch, but it is not being controlled by a patent covering a digital watch.

There is no relevant market specifically on watches that would be controlled by someone having a patent on a digital watch because I can go out and buy another watch.

The Small Business Legislation Council has in fact confronted this situation and we have, after such confrontation, after such consideration and deep analysis, we have come up with a resolution that I would like to share with you now because it is a mandate from which I now speak. And I quote:

> The Small Business Legislative Council urges and supports changes in current government patent policy to allow small businesses patent protection in inventions made under government-sponsored research, provided that allowance is made to permit the government to recoup its initial funding under certain circumstances. Small business innovations developed under Federal contract should be patentable by the contractor, allowing that business a reasonable time to develop the new idea commercially. Failing that, the government should provide exclusive license to such innovations, with preference to small business. These actions will provide an increased incentive to the traditionally innovative small business sector to seek R&D contracts and to commercialize new and beneficial products for the marketplace.

That is my mandate. They are controversial, but that is my mandate. And it gives recognition to the fact that small business has been on the forefront of innovation. Lip service has been given today on several occasions to that fact. And I appreciate that comment.

But we are tired of just getting lip service. We are now here to obtain something.

There is another bill here in the House that has been introduced, H.R. 2414. It contains the summarized items that I just mentioned. It protects the small business contractor with regard to his background rights, or it should. H.R. 2414 appears to the small business community to constitute a long sought, very salutary conclusion to ameliorate a difficult problem that we have faced, as I told you before.

President Carter in his October 31, 1979, initiatives specifically provided support for one type of legislation when he said that legislation will be introduced which "will provide exclusive licenses to contractors in specific field of use."

You have that surfacing in the administration-proposed bill. But the President went on to say, even more importantly for my constituency, the following:

"I will also support the retention of patent ownership by small businesses and understand, the prime thrust of legislation now in Congress"—I am not talking about the administration bill—"in recognition of their special place in our society."

The President has also given us lip service. We would like to now move on that.

While the President did not specifically identify the legislation when he used the word "now," I would interpret it to be H.R. 2414. I would further opine that the President intended to incorporate

the concept of exclusive licenses to contractors in specific fields of use in legislation apart from H.R. 2414.

So I think the administration today has not followed the precept of the President. They have come out with legislation which incorporates two parts when the President did not say that and he did not mean that.

Small business is exhilarated by the various people in the Congress, both on the Senate and the House side, that we do have the kind of support that I think is extremely important, and that there will be fruition in this direction in the very near future.

H.R. 2414 has also become the focus, rallying point, for small business as evidenced in the recent results from the White House Conference on Small Business.

I was a delegate to that. The treatment accorded small business under H.R. 2414 was very worthy of consideration during that conference. And happily to everyone concerned, the priorities of the various options going to the President as a result of that particular conference, the concept of treatment for small business with regard to the patent policy wound up as No. 11 out of 60.

So you can see that this is important to not only my constituency, but everyone else in the conference.

I want to skip a few points here. I know time is fleeting.

Turning now to some of the specifics in the proposed draft legislation, small business would appear presumptuous to come under the concept of awarding to large business preselected fields of use licenses. While the concept of first instance appears to have an overall salutary benefit, and indeed appears to possess considerable procompetitive aspects, it is felt that such a concept is now only an invitation for establishing a dialog. And I think that was brought out by the very lengthy comments that we had to go through before.

It would appear that the concept may be very controversial, as brought out by some of the previous speakers right now, even though it may impact favorably on small business by discouraging further economic concentration in big business as big business would only obtain a field of use license.

Giving title to big business may raise the specter of a charge that the American taxpayer is subsidizing the research of Mobil or G.E., companies which are well endowed and capable of paying for their own research.

As discerned, the proposed draft legislation gives small business some discomfort as a result of the section on "Deviation and Waivers" and portions of certain other sections. Small business believes that these sections in fact present untoward discretion in the governmental agencies to deviate from the general duties and rights described in the proposed draft legislation, that this legislation could, if administered poorly, result in a nonuniform disposition of invention rights.

Again, it is submitted that the draft legislation, while having salutary features, needs either additional explanation and/or modification or both.

Small business has reservations with regard to section 503 of the draft legislation. Section 206(d) authorizes a third party to petition an appropriate agency to exercise march-in rights under section

206(a). Under section 503(b), an adverse decision to such a petition is subject to appeal to the U.S. Court of Claims. Such an appeal is to be held de novo. By using these sections, a deep pocket, big business petitioner can tie up for years the final disposition of patent rights of small business. As time is definitely on the side of big business, small business would admit defeat.

Inasmuch as both the draft legislation and H.R. 2414 give evidence of a two-tier approach for small business with regard to title to inventions made under Government auspices, permit me to discuss the wise rationale behind such efforts.

We are all aware of the numerous studies that have concluded that heretofore small business has been in the forefront of innovation. But we are now also aware that small business has become the shackled giant of innovation. If questioned, undoubtedly, representatives of big business would testify that they, too, have been innovative.

Recently, before another committee of the Congress, I heard a witness from big business respond to just such a question by stating that fully 50 percent of the products presently sold by his company were introduced during the last 10 years. I would dare say that if one would examine that 50 percent figure, one would find that most of those so-called new products resulted from product differentiation.

I have read an awful lot of annual reports that would confirm that. They are the same products having different styling, different packaging, or else are in there because small business have been acquired and are now part of their annual report.

If big business in the United States is so innovative, why do I drive a foreign-made car, own a foreign-made camera, and watch a foreign-made TV. Now one might say that there are many reasons for this phenomenon. I would opine that it is not the fault of the American worker. Recent accounts demonstrate that workers in foreign-owned manufacturing facilities in the United States give evidence of greater productivity and fewer rejects than is experienced by the foreign manufacturer in its home country. That says something very favorable about the American worker today, in spite of what some other people have said.

Big business shouldn't be counted out because they have enormous competence in being able to deliver a huge volume of goods and services at prices driven by an essentially free market. By inference from many studies, it can be validly stated that most big business has only a limited ability to be innovative. Therefore, we of small business see no good reason to reward failure. We see every reason to reward small business because of its proven record to which the President alluded as mentioned in the above.

It is our belief that giving title to big business will only perpetuate economic concentration and may even enhance it. It will be anticompetitive and may not necessarily give rise to innovative products. Any march-in rights retained by the Government is a specious remedy. Once having given title to an invention to big business, no one else would have an interest in commercializing such an innovation unless it was being handled by that big business.

For this and other arugments, the small business community seeks for itself that special treatment of the kind found in H.R. 2414 and the draft legislation. We are aware that efforts are being made to give all "equal treatment" such as can be found in H.R. 5715.

We say to you without equivocation that when you treat "Joe's Machine Shop" the same as G.M., you are treating "Joe's Machine Shop" unfairly; whether it concerns OSHA, taxes, regulations, depreciation schedules and, finally, title to inventions made under Government auspices. It has been well documented and concluded that it is critical to ameliorate the heretofore treatment accorded small business in the disposition of invention rights resulting from Government-sponsored research.

The following statements are axiomatic:

One, small business has been treated unfairly in the disposition of invention rights.

Two, the taxpayer rarely, if ever, obtains commercial benefits from inventions resulting from Government-sponsored research.

Three, innovation is diminishing in the United States.

Four, small business has a great track record in innovation, in creating new jobs, and being at the cutting edge of competition.

Therefore, the President's mandate of October 31, 1979, is best carried out by first attending to the enactment of H.R. 2424, followed by a continued consideration of the proposed draft legislation. Small business is grateful to have found an ally in the President to go along and complement the allies that we have found in the Congress.

With that I conclude my statement. But I also wish to say to you, Congressman Brown, I appreciate tremendously your interest in the conference of the week of April 20 with regard to analyzing and building a model system on diffusion of technology, undertaken by the University of California, together with the Engineering Foundation.

Mr. Ertel, I hope that you respond favorably, also, to the invitation.

Thank you very much.

[The prepared statement of Mr. Schellin follows:]

STATEMENT OF

ERIC P. SCHELLIN

ON BEHALF OF

NATIONAL SMALL BUSINESS ASSOCIATION

SMALL BUSINESS LEGISLATIVE COUNCIL

AMERICAN SOCIETY OF INVENTORS

AND NATIONAL PATENT COUNCIL

BEFORE THE HOUSE OF REPRESENTATIVES

COMMITTEE ON SCIENCE & TECHNOLOGY

SUBCOMMITTEE ON SCIENCE, RESEARCH & TECHNOLOGY

HOLDING HEARINGS ON

H.R. 5715, THE UNIFORM FEDERAL R & D UTILIZATION ACT

AND

THE PRESIDENT'S PATENT POLICY PROPOSALS

FEBRUARY 8, 1980

"It is the declared policy of the Congress that the Government should aid, counsel, assist, and protect, insofar as is possible, the interests of small business concerns in order to preserve free competitive enterprise...."

(P.L. 85-536, as amended, Section 2(a), Small Business Act.)

STATEMENT OF
ERIC P. SCHELLIN
ON BEHALF OF
NATIONAL SMALL BUSINESS ASSOCIATION
SMALL BUSINESS LEGISLATIVE COUNCIL
AMERICAN SOCIETY OF INVENTORS
AND NATIONAL PATENT COUNCIL
BEFORE THE HOUSE OF REPRESENTATIVES
COMMITTEE ON SCIENCE & TECHNOLOGY
SUBCOMMITTEE ON SCIENCE, RESEARCH & TECHNOLOGY
HOLDING HEARINGS ON
H.R. 5175, THE UNIFORM FEDERAL R & D UTILIZATION ACT
AND
THE PRESIDENT'S PATENT POLICY PROPOSALS
FEBRUARY 8, 1980

Mr. Chairman and Members of the Committee:

My name is Eric Schellin. I am Chairman of the Board of Trustees of the National Small Business Association (NSB), a multi-industry trade association representing approximately 50,000 small business firms nationwide. I am also Executive Vice President of the National Patent Council and Chairman of the Advisory Committee of the American Society of Inventors.

I am also appearing today on behalf of the Small Business Legislative Council (SBLC), an organization of national trade and professional associations whose membership is primarily small business. SBLC focuses on issues of common concern to the entire small business community. The SBLC membership and their affiliates represent approximately four million small business firms nationwide. The SBLC list of members who have endorsed a policy position paper entitled "An Equitable Policy for Small Business Patents on Inventions made with Federal Assistance" is attached. This position paper and list of associations appear as Attachments A and B.

We commend the committee for the opportunity to address the issue of under-utilization of the results of Government-financed Research & Development,

especially to complete the innovation process by making available to all of us alike the benefits resulting from such R&D endeavors.

The United States has been the leading innovative nation and has created many new industries. One need only look at the major new industries started within the last fifty years, such as those involving electronics, lasers, antibiotics, synthetic fibers, instant photography and xerography. Most of these industries began as small businesses. There is still room for further innovation and it will continue, especially by small business, if provided with a proper environment. Such an environment existed for years and produced outstanding results. Our patent system contributed significantly to an environment which promotes innovation. Unfortunately, there have been disturbing recent indications that there has been a decrease in the rate of innovation and in that portion of the R&D investment devoted to new product lines and basic research. It is incumbent on all of us to look everywhere to identify sources for innovation. One area not yet properly exploited is the arena of Government-financed R&D. Today, as is known, there are as many Government patent policies as there are Government agencies. It is submitted that any effort to establish a uniform government patent policy is commendable and if the policy provides particular incentives to small business, such policy deserves accolades. Therefore, we fervently applaude with sincerity the fact that this committee has seen fit to take the time from other pressing business to thoughtfully consider a draft of a proposed bill: "To establish a uniform Federal system for management, protection, and use of inventions that result from federally-supported research or development, and for related purposes".

Before addressing some of the issues posed in the draft legislation, permit me to share with you the mandate under which I am able to respond to the invitation to appear on this occasion. The Small Business Legislation Council (SBLC) has confronted the lack of a uniform Government patent policy. Many of the individual small business members of some of the member associations of SBLC have met with the stark reality that they are treated by Government contracting officials with discrimination for the sole reason that they are small business. In other words, even when a Govenment contracting official has discretion to grant title to an invention made under a Government contract, it will be refused to small business but granted to a larger business. Worse yet, any proprietary rights gained as a result of a developing expertise garnered before small business entertains funding under a Government contract may be jeopardized with a loss of such property rights ensuing. A number of individual small business persons, some of whom are members of the National Small Business Association, shared such experiences with various committees of the Congress.

Because of the aforementioned inequities and the lack of uniform Government patent policies, the SBLC, after careful consideration, approved the following resolution:

RESOLVED

> The Small Business Legislative Council urges and supports changes in current government patent policy to allow small businesses patent protection in inventions made under government-sponsored research, provided that allowance is made to permit the government to recoup its initial funding under certain circumstances. Small business innovations developed under federal contract should be

patentable by the contractor, allowing that business a reasonable time to develop the new idea commercially. Failing that, the government should provide exclusive license to such innovations, with preference to small business. These actions will provide an increased incentive to the traditionally innovative small business sector to seek R&D contracts and to commercialize new and beneficial products for the marketplace.

This, then is my mandate. To summarize:

1. Small business is desirous of obtaining any patent rights on inventions made under Government-sponsored research.

2. Small business wants a first right of refusal in obtaining exclusive licenses for such developed inventions not titled to small business.

3. Small business appreciates the necessity to permit government to recoup its funding that resulted in the development of the inventions.

Proposed Bill H.R. 2414 contains the above summarized items which needs to be amended to include protection to the small business contractor with regard to his background patent rights. H.R. 2414 appears to the small business community to constitute a long sought very salutary conclusion to ameliorate a difficult problem facing small business.

President Carter in his October 31, 1979, Industrial Innovation Message to the Congress stated that he will support uniform Government patent legislation and "that legislation will provide exclusive licenses to contractors in specific field of use". More importantly to the small business community

he stated: "I will also support the retention of patent ownership by small businesses and universities, the prime thrust of legislation now in Congress, in recognition of their special place in our society". (emphasis supplied). While the President did not specifically identify the legislation about which he spoke, small business interprets this to mean H.R. 2414. I would further opine that the President intended to incorporate the concept of "exclusive licenses to contractors in specific field of use" in legislation apart from H.R. 2414.

Small business is indeed exhilarated by the support of H.R. 2414 by the President. With such support, there is now before us the delightful prospect that there will be satisfactory fruition of the efforts of so many individuals who have devoted considerable time to assisting small business. This proposed legislation favoring small business has been given careful and thoughtful consideration by the small business community. It is believed that there is a wide consensus of approval of H.R. 2414 in both houses of Congress. Support by the President constitutes the capstone.

H.R. 2414 has also become a rallying focus point for small business as evidenced from the recent results culminating in a week long White House Conference on Small Business. The treatment to be accorded small business under H.R. 2414 was indicated by the conference as being worthy of inclusion in a high priority list of recommendations which will be sent to the President. One can validly say that the matter of presenting small business contractors with title to inventions made within the purview of a Government contract has come full circle.

66-321 O—80——11

It must be noted however that the proposed draft legislation being considered today contains features which are of enormous interest to small business. The carrying forward of the concept that small business is to be accorded title to inventions resulting from Government sponsored research is received as a positive indication that more than lip service is to be given small business. It shows also that the President's initiatives of October 31, 1979, are indeed to be acted upon. Furthermore the draft legislation contains a feature that may be attractive to small business, namely, that there is no recoupment by the Government of funds expended by the Government in the event the invention titled to small business makes money for the small business. It should be noted that a recoupment section can be found in H.R. 2414. In view of the aforementioned SBLC resolution, I have testified on a previous occasion in favor of recoupment, even knowing that when big business gets title under extant Government patent policies there will be no recoupment. Certainly, as small business is treated favorably the proposed draft legislation has considerable merit. Perhaps such especially meritorious treatment should be included in H.R. 2414, such as by deleting the recoupment section.

On the other hand, it is noted that under H.R. 2414 small business is given preference in receiving an exclusive license on inventions owned by the Government. No such section giving preferential treatment to small business is said to be in the proposed draft legislation.

Turning now to some other specifics found in the proposed draft legislation, small business would appear presumptuous to comment on the concept of awarding to large business preselected field of use licenses. While the concept at first instance appears to have an overall salutary benefit and indeed

appears to possess considerable pro-competitive aspects, it is felt that such a concept is now only an invitation for establishing a dialogue. It would appear that the concept may be controversial, even though it may impact favorably on small business, by discouraging further economic concentration in big business as big business would only obtain a field of use license. Giving title to big business may raise the specter of a charge that the American taxpayer is subsidizing the research of Mobil or G.E., companies well endowed and capable of paying for their own research.

As discerned the proposed draft legislation gives small business some discomfort as a result of the section on "Deviation and Waivers" and portions of certain other sections. Small business believes that these sections in fact present untoward discretion in the governmental agencies to deviate from the general duties and rights described in the proposed draft legislation, that this legislation could, if administered poorly, result in a non-uniform disposition of invention rights. Again, it is submitted that the draft legislation, while having salutary features, needs either additional explanation and/or modification or both.

Small business has reservations with regard to Section 503 of the draft legislation. Section 206(b) authorizes a third party to petition an appropriate agency to exercise march-in rights under Section 206(a). Under Section 503(b) an adverse decision to such a petition is subject to appeal to the U.S. Court of Claims. Such an appeal is to be held de novo. By using these sections a deep pocket big business petitioner can tie up for years the final disposition of patent rights of small business. As time is definitely on the side of big business, small business would admit defeat.

Inasmuch as both the draft legislation and H.R. 2414 give evidence of a two-tier approach for small business with regard to title to inventions made under Government auspices, permit me to discuss the wise rationale behind such efforts. We are all aware of the numerous studies that have concluded that heretofore small business has been in the forefront of innovation. But we are now also aware that small business has become the shackled giant of innovation. If questioned, undoubtedly, representatives of big business would testify that they too have been innovative. Recently, before another committee of the Congress, I heard a witness from big business respond to just such a question by stating that fully fifty percent of the products presently sold by his company were introduced during the last ten years. I would dare say that if one would examine that fifty percent figure one would find that most of those so-called new products resulted from product differentiation, that is, they are the same products having different styling, different packaging or, also very likely, are due to acquisitions.

If big business in the U.S. is so innovative, why do I drive a foreign made car, own a foreign made camera and watch a foreign made TV. Now one might say that there are many reasons for this phenomenon. I would opine that it is not the fault of the American worker. Recent accounts demonstrate that workers in foreign owned manufacturing facilities in the U.S. give evidence of greater productivity and fewer rejects than is experienced by the foreign manufacturer in its home country.

Big business possesses enormous competence in being able to deliver a huge volume of goods and services at prices driven by an essentially free market. By inference from many studies it can be validly stated that most

big business has only a limited ability to be innovative. Therefore, we of small business see no good reason to reward failure. We see every reason to reward small business because of its proven record to which the President alluded as mentioned in the above.

It is our belief that giving title to big business will only perpetuate economic concentration and may even enhance it; it will be anti-competitive and may not necessarily give rise to innovative products. Any march-in rights retained by the Government is a specious remedy. Once having given title to an invention to big business, no one else would have an interest in commercializing such an innovation.

For this and other arguments, the small business community seeks for itself that special treatment of the kind found in H.R. 2414 and the draft legislation. We are aware that efforts are being made to give all "equal treatment" such as can be found in H.R. 5715. We say to you without equivocation that when you treat "Joe's Machine Shop" the same as G.M. you are treating "Joe's Machine Shop" unfairly; whether it concerns OSHA, taxes, regulations, depreciation schedules and, finally, title to inventions made under Government auspices. It has been well documented and concluded that it is critical to ameliorate the heretofore treatment accorded small business in the disposition of invention rights resulting from Government sponsored research.

The following statements are axiomatic:

1. Small business has been treated unfairly in the disposition of invention rights.

2. The taxpayer rarely, if ever, obtains commercial benefits from inventions resulting from Government sponsored research.

3. Innovation is diminishing in the United States.

4. Small business has a great track record in innovation, in creating new jobs and being at the cutting edge of competition.

Therefore, the President's mandate of October 31, 1979, is best carried out by first attending to the enactment of H.R. 2414, followed by a continued consideration of the proposed draft legislation. Small business is grateful to have found an ally in the President, whose presence complements the many allies already evident in the Congress.

ATTACHMENT A

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Small Business Legislative Council*

February 6, 1980

The position paper -- An Equitable Policy for Small Business Patents on Inventions Made with Federal Assistance -- is supported, as of this date, by 35 members of the Small Business Legislative Council:

American Association of Nurserymen
Washington, D.C.

Association of Diesel Specialists
Kansas City, Missouri

Association of Independent Corrugated Converters
Washington, D.C.

Association of Physical Fitness Centers
Bethesda, Maryland

Automotive Warehouse Distributors Association, Inc.
Kansas City, Missouri

Building Service Contractors Association International
McLean, Virginia

Business Advertising Council
Cincinnati, Ohio

Direct Selling Association
Washington, D.C.

Eastern Manufacturers and Importers Exhibit, Inc.
New York, New York

Furniture Rental Association of America
Washington, D.C.

Independent Bakers Association
Washington, D.C.

Independent Business Association of Michigan
Kalamazoo, Michigan

Independent Business Association of Washington
Bellevue, Washington

International Franchise Association
Washington, D.C.

Institute of Certified Business Counselors
Lafayette, California

Machinery Dealers National Association
Silver Spring, Maryland

Manufacturers Agents National Association
Irvine, California

Marking Device Association
Evanston, Illinois

Minnesota Association of Commerce and Industry Small Business Council
St. Paul, Minnesota

National Association for Child Development & Education
Washington, D.C.

National Association of Brick Distributors
McLean, Virginia

*Of the National Small Business Association

National Association of Floor
Covering Distributors
Chicago, Illinois

National Coffee Service Association
Chicago, Illinois

National Family Business Council
West Bloomfield, Michigan

National Home Improvement Council
Washington, D.C.

National Independent Dairies
Association
Washington, D.C.

National Independent Meat Packers
Association
Washington, D.C.

National Office Machine Dealers
Association
Zanesville, Ohio

National Paper Trade Association, Inc.
New York, New York

National Parking Association
Washington, D.C.

National Patent Council, Inc.
Arlington, Virginia

National Small Business Association
Washington, D.C.

National Tool, Die & Precision
Machining Association
Washington, D.C.

National Wine Distributors
Association
Chicago, Illinois

Printing Industries of America, Inc.
Arlington, Virginia

AN EQUITABLE POLICY FOR SMALL BUSINESS PATENTS ON INVENTIONS MADE WITH FEDERAL ASSISTANCE

One of our nation's greatest problems is the decline in the rate of productivity growth, and a major factor in this decline has been the discouragement of innovation at the small business level. Less than 5 percent of all federal research and development dollars go to small business, yet both a Department of Commerce study in 1966 and an Office of Management and Budget study in 1977 show that small business accounted for more than half of all scientific and technological developments since the beginning of this century. A National Science Foundation study for the period between 1953 and 1973 found that small firms produced 4 times as many innovations for every research and development dollar as medium sized firms and 24 times as many as the largest firms.

It has become increasingly evident that many small innovative companies are avoiding the federal research grant process simply because of the uncertainty over whether or not they will be allowed to retain patent rights on inventions made under research sponsored by federal funds. This is a problem which appears to have a fairly simple solution -- allowing small businesses to obtain limited patent rights on discoveries they have made with federal money.

Experience has shown that unless the private sector (including universities, individual inventors, and non-profit organizations) is given sufficient incentive to bring new innovation to the marketplace, the development of new technologies will decline. Given the rapid drop in U.S. productivity increases over the past few years, it is apparent that new technology development in the U.S. must be encouraged.

The federal government itself is a prime disincentive for innovation development -- inventions made under various agency grants have been allowed to waste away in government storerooms benefiting no one. The Departments of Energy and Health, Education, and Welfare, for example, often take months and in some cases years to review petitions for patent rights on inventions developed with federal grants. And, when the government decides to retain patent rights on these inventions, there is little chance that they will ever be developed. Of the 30,000 patents that the government presently holds, less than 4 percent are ever successfully licensed. This is very little return on the billions of dollars that are spent every year on research and development.

Small businesses should be allowed to obtain limited patent protection on discoveries they have made under government-supported research if they provide the additional resources needed to successfully commercialize the product. This change would provide the American marketplace with additional innovative product developments and remove the

disincentive to many small companies from participation in the federal R&D process. The benefit is not only for small business, but the American economy, as well, since small firms have been the greatest source of new jobs in the past decade.

Under present practice, the government lets an R&D contract to a small business having the expertise as evidenced by background know-how. The patents devolve to the government, but when it comes to supplying the hardware, the conventional practice is for government to go to larger business, who can manufacture with impunity,in derogation of the proprietary rights of the small business contractor. This should be changed by legislation stating that no funding agreement with a small business firm shall contain a provision allo..ng the federal government to require the licensing to third parties of inventions owned by the small business firm which were not conceived in the performance of work under a federal R&D grant. The only exception would be that such a provision had been approved by the head of the agency and a written justification had been signed by the head of the agency. Such action by the agency head should be subject to judicial review.

RESOLVED

The Small Business Legislative Council urges and supports changes in current government patent policy to allow small businesses patent protection on inventions made under government-sponsored research, provided that allowance is made to permit the government to recoup its initial funding under certain circumstances. Small business innovations developed under federal contract should be patentable by the contractor, allowing that business a reasonable time to develop the new idea commercially. Failing that, the government should provide exclusive license to such innovations, with preference to small business. These actions will provide an increased incentive to the traditionally innovative small business sector to seek R&D contracts and to commercialize new and beneficial products for the marketplace.

# # #

Mr. ERTEL. Thank you.

Our next witness is Mr. Rose, chairman of the patent task force, Institute of Electrical and Electronic Engineers.

We will incorporate your written testimony into the record.

Mr. ROSE. Mr. Schellin was complaining about being next to last. I am last. Most of what I have to say has been said, very much of it by you in some of your discussions earlier with administration representatives.

Mr. ERTEL. Mr. Rose, you ought to be a freshman Member of Congress. You are always last then.

Mr. ROSE. I am a freshman testifying before Congress.

There have been a number of points raised here. I don't know quite in what order to take them up. I would like to say I was Chief Patent Counsel for the National Bureau of Standards for 3 years. I was Patent Counsel for 3 years, and Chief Patent Counsel 2 years. I heard something earlier the administration said about having uniformity as a result of passing a piece of legislation. All Government agencies at that time operated, and still do as I understand, under Executive Order 10096, which controls the right of the Government to inventions of its employees.

At that time a survey was made, in the early fifties. The Navy took title to about 10 percent of the inventions of its employees. The Department of Interior took title to 95 percent of the inventions of its employees. Of course, they were operating under the same Executive order.

So one wonders how much uniformity will be achieved under any of these bills.

We have some problems with the distinction between small and big business because basically what is small by definition? I really feel it should be "other," because if you are not small it doesn't mean you are big.

There is a vast range of companies that fall between the small and big business that are equally affected by this bill. I feel that these people should be kept in mind since probably they represent the largest percentage of the business community in this country—the intermediate businesses.

The march-in rights we find particularly onerous, where you come up with a definition which is not the classical definition. If you wish to say that, if it is not being commercialized we should be able to come in and see to it that it is proper.

But to say you have done such a fine job that now we have made it the subject of a Government regulation, that your widget must be used, you lose title as a result of doing this job, we just cannot see the rationale behind this. This is not a classical march-in rights provision. We feel that it is fraught with danger.

If I were the first person to develop smoke detectors, and suddenly every Government agency in the United States says, "Every home must have a smoke detector but we cannot have you having a monopoly, you have done a fine job of getting this to the market, but now we are going to take it away from you, and give it to everyone," I feel that this is a sword of Damocles. It is almost like saying don't do the best job.

I think the only real difference between the institute's approach and those of the other people that favor in effect your bill, the

Ertel bill over the administration bill, is one of approach. We feel that, like everyone else, there has been a terrible slip in innovation in this country today; that the only way, since the Government does control the majority, at least half of the R. & D. funds that are available, we are really looking for the best to perform on contracts. Not only the best company in a business, but that company putting its best people onto a particular project.

Now, what are the chances that a company will put its best engineers onto a project where if they are successful, and the best engineers are the ones most likely to be successful, or the best scientists, the Government is going to come in and say at the end, "No, you cannot have that, we wish to take the title to this because this is a very important invention."

You are not going to put your best people on it. You will put others. I have seen instances where a proposal has been put in with a list of very fine engineers that are available for the contract, and when the contract is received, these are not the people that performed. They have switched personnel. And this you will run into quite consistently.

You are not going to put your best people on a project that you are going to lose in the long run if you are successful in it, or you stand a very great chance of losing your rights to it in the long run.

The other aspect of this is designating a field of use. Frankly, I am happy to see Congress recognize that there is such a thing because the Justice Department for years was after holding a patent misused on the basis of issuing licenses for a field of use.

With the new change in the head of the Antitrust Division in recent years this has been backed off a bit. But it has always been a sword hanging over our heads.

But here, you are setting up under the administration bill a dual licensing program. You have an exclusive license with the right to sublicense in certain specified fields with the Government licensing the rest.

Now, these licenses inevitably are going to butt heads.

As I see it, perhaps a better way, if we are concerned about this, is to use the approach of some European countries that if after 2 or 3 years something has not been commercialized, or 4 or 5 years, in a given field, other companies can apply, say, to the Government for a license who will then send it back to the company that has the title, and say, "OK, what are your intentions, how far are you away from development; if not, license."

This way we solve the problem of dual licensing authorities. Also you are sending these requests back to the people that have the ability to provide the technology transfer that is, as everyone here, I think, has agreed, very important. Although I have licensed patents without technology transfer I will admit that the job is made considerably simpler if you are willing to transfer technology at the time you license the patent; and sometimes it is critical. Other times it is not. It depends on the nature of the invention and how complex the technology is.

The incentive to licensing under this type of approval, if you are not doing your job, the Government—Congress—can always, if you wish, throw in the additional threat that the company will lose

title if it don't engage in reasonable negotiations for the transfer. But at least we are now dealing with one entity doing the licensing, not multiple entities.

Another difficulty with this field of use approval is as follows: I represent a client that developed a device which was to be used as the timing mechanism in an industrial control. It never made it there. However, today you will find it in massaging showers, windshield washers on automobiles, and oral irrigators. It took them quite a while to get there. But it is certainly a far cry from a timing mechanism in an industrial control.

You don't know where you are going. I can see what would happen in GE—they have made this nice invention, and the attorneys have done a fine job, they are going to get nice, broad claims—and now what business is GE in? GE is in almost every business. So what is left? Does GE want to burden itself with having to police every field of use they put down? Are they going to circulate this to every department and say, "Hey, do you have an interest in this?"

How do you handle something like this in a company that size? Or General Motors, or any of the other large companies. It is even difficult in a small one.

This company I am talking about, with its windshield washers, is a $2 million, $3 million a year sales. They had trouble. They couldn't define where they were going with this.

The administration bill has a Court of Claims provision—if you don't like what is happening, go to the Court of Claims. We have a case pending in the Court of Claims right now. I think we have been there 7 years to get the patent held valid.

We estimate with the delaying tactics being engaged in by the Department of Justice we will be there another 6 years on the accounting. That is 13 years. Justice can move quickly when it wants to move. But if it does not, you are going to be there forever. This is another problem we see.

We talk about monopoly and we talk about the availability of a product to the public. And very often there is no question in our society these two goals will butt heads. We don't know that that conflict can be resolved. But we don't believe that we need antitrust provisions in this type of legislation.

There is a well developed body of case law, under the antitrust laws, that takes care of this problem. You have a contractor that is highly qualified in his field, he takes a contract. And lo and behold, he comes up with a significant invention. And you tell him you cannot have that, because if you bought that from a third party that would be an antitrust violation. Why take the contract? Are you going to assign your best people to it? Is the best qualified contractor going to bid on that contract?

And right now, with what is happening in technology in this country, and our decline in innovation; and it is severe; can you afford today to pass legislation which is calculated to reduce the participation of our highly qualified companies in Government contracting? Quite frankly, I don't think we can.

[The prepared statement of Mr. Rose follows:]

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The following is testimony of Howard Rose, Chairman, Task Force on Patents, United States Activities Board (USAB), The Institute of Electrical and Electronics Engineers (IEEE), prepared for submission to the Subcommittee on Science, Research, and Technology, Committee on Science and Technology, U. S. House of Representatives, February 8, 1980.

* *

I am Howard Rose, and I am appearing here today on behalf of the Institute of Electrical and Electronics Engineers (IEEE) United States Activities Board (USAB) Task Force on Patents of which I am Chairman. The IEEE was founded in 1884 and is today the world's largest technical, professional engineering society with over 206,000 members worldwide, of which 150,000 members reside in the United States. The Institute until relatively recently devoted itself wholly to technical matters holding conferences and publishing articles for the purpose of disseminating technical information to its members.

In 1973 the Institute established the United States Activities Board (USAB), a mechanism through which the Institute provides its perspectives to the Administration and the Congress on professional and technical matters of concern to its members in the United States.

As is true of most technical societies and its members, we believe that the patent system has contributed greatly to the technological development and excellence of this country. However, we are concerned about the recent decline in innovation in this country and the resulting decline in our technological standing in the community of nations.

In consequence, the USAB Patent Task Force whole-heartedly supports the avowed intent of the various bills now pending before Congress to institute positive programs to foster a renewed dedication to creativity and innovation in the United States. Further, we are in complete sympathy with the avowed intent of both the proposed Administration Bill and Congressman Ertel's Bill, H. R. 5715, to stimulate innovation, to promote widespread public use of inventions, and to encourage participation of the best-qualified contractors in federally sponsored research and development programs.

You will note that the comment I have just made is primarily abstracted from the proposed Administration Bill with the exception that I have substituted "best qualified contractors" for "all qualified contractors" since in our opinion only by attracting the best will the efforts of Congress produce significant results. In this context, we feel that many provisions of the proposed Administration Bill would serve to defeat this aim and would attract the mediocre, if not worse.

Mr. Chairman, I would like to address the majority of my comments to problem areas we have identified in the Administration proposal:

1. Distinction Between Small And Big Business - The distinction between small and big business, we believe, is highly detrimental and one of the most detrimental elements in the proposed legislation. Where a big business is the best qualified to perform a contract, it must have invested considerable time and effort to achieve such preeminence. While it may wish to accept the contract in order to assist the government, big business must also face the possibility that an important invention may be made as a result of its diligent efforts to meet the government's needs. If the company is not permitted to own its own invention, its overall commercial proprietary position may be seriously jeopardized. Only in those instances where the prospective additional investment required to achieve a further significant advance would place a real burden on

the company's finances might such a company consider undertaking such a contract.

2. March-In Rights - It is argued that a company can negotiate a contractor's title clause before undertaking a contract in a sensitive area of its business. But, this is complicated by the march-in-rights provided in the proposed Administration's Bill. These are not normal march-in-rights which are generally limited to reacquisition of rights in those instances where the contractor has failed to commercialize the invention or do so to the extent necessary to meet demand. Under the proposed Administration Bill,march-in-rights permits acquisition rights "if necessary to meet requirements for public use specified by Federal regulations." Therefore, if the contractor performs so well that Government regulators adopt his invention as the required "widget," the contractor loses his exclusive license.

Are the "best" likely to accept a contract under these circumstances?

3. Anti-Trust Laws - Relating to the problem which I have just mentioned is the provision that if the invention is such that if it had been acquired from a third party, it would violate the anti-trust laws. Under such law if a company that accepts a Government contract produces an excellent "widget" and achieves predominance in its field, it loses its patent. This result would most likely be achieved by the best qualified company in the field of interest. Should it risk such a result? Would you, as the President of a company, bid on a contract under these circumstances and even if you did, would you assign your best personnel to the project rather than a project in which your company had an assured future? An additional danger is that this same result could occur to a company that was small at the time of the contract but which built a big business on the basis of a subject invention only to lose its rights because it did such a fine job.

We firmly believe that the anti-trust laws of the United States can stand on their own and do not require special provisions to be written into patent legislation. Patents are legal monopolies but to the extent they are misused,

the anti-trust laws are quite adequate to handle the situation.

4. Field Of Use - The field of use provisions in Section 201(b)(3) are difficult to understand. It is not practical to require the "crystal ball" forecasting of paths to be followed over the next 20 or 25 years. Many years ago, a client of mine developed a device for use in industrial controls. It never made it in that field, but today it can be found in massaging showers, oral irrigators and wind shield washers for automobiles.

5. Reporting Requirements - Under the Administration proposal, a contractor may lose rights if in the opinion of the responsible agency the company has failed to file necessary reports including complete technical information. Section 7(a) of the proposed Bill explicitly excludes rights to the Government in background inventions and by analogy, it is assumed trade secrets. How can a contractor, however, provide "complete technical information" without disclosing information relating to background information including, in many instances, trade secrets and inventions forming the subject matter of still pending patent applications? This provision is subject to gross abuse and when viewed in the light of the Freedom of Information Act is frightening in its implication. This is particularly true when it is considered that Article 500(d) delays operation of such act only until an application is filed. The total effect could be disastrous to a company's carefully structured development program.

6. Government Title To Inventions - The Government has, on more and more occasions, have been included in specific legislation, resulted in alarming decline in the ratio of patents acquired to dollars spent. In 1969, 5,500 inventions disclosures were derived from contracts granted for research and development. This figure is down from the 7,900 disclosures in 1970. When it is considered that approximately half of the research and development funds expended in this country annually are Government funds that roughly 50,000 patents are granted each year and that only 5,500 inventions (only some percentage of which will issue as patents

were disclosed to the Government by Contractors in 1979, the magnitude of the problem becomes manifest.

From my own experience, I advise clients not to take Government research and development contracts; but if they must, I advise them to not take them in areas where they have large investments of their own. Further, I know from personal experience that if both of the above admonitions are ignored, important inventions are either not reported or were somehow developed under company funds. The above practices were particularly prevalent under contracts requiring granting of title to the Government.

We believe that the case against Government ownership of contractor's inventions was well and succinctly stated by Mr. Jordan J. Baruch, the Assistant Secretary for Science and Technology, Department of Commerce, at his appearance before the Senate Committee on Commerce, Science and Transportation on January 21, 1980, when he stated:

> Advocates of contractor title point out that government ownership with the offer of unrestricted public use has resulted in an exceptionally low rate of commercial application of federally-owned inventions. The costs and risks of commercializing an invention, developing it and its market, often are so substantial that commercialization will not take place or even be attempted in the absence of exclusive commercial rights. Ironically, the free public right to use a federally-owned patent thus results, in practical terms, in a denial of the opportunity to use the invention.

Contractor title proponents also assert that a government title policy discourages the most qualified firms from participating in government research and development projects. These firms often have invested heavily in research and development related to the government project; consequently, their experience and technological advancement would enable them to perform the government contract more inexpensively and more effectively than would other potential contractors. These firms refuse to bid on the government work, however, because the cost to them of publicly disclosing their independ-

dently acquired information in conjunction with the disclosure of an invention made under the government contract would be much greater than the profits they could expect to receive under the contract.

Another problem with the policy of government ownership is that it provides little incentive for contractors to disclose their inventions to the government. Rather, the contractor either may maintain the invention's secrecy or make an incomplete disclosure and subsequently attempt to own its own patent of the federally-financed technology. The incentive for nondisclosure is especially great for those contractors that would be required to divulge independently-acquired information when they revealed a federally-financed invention to the government.

A contractor title policy would ameliorate the disclosure disincentive by eliminating the financial penalty associated with disclosure. Further, a contractor title policy would create an incentive to disclosure by providing contractors with property rights in federally-financed inventions on the condition that such inventions are reported to the government.

The corollary to the above is that a firm commitment to a contractor title policy provides Government access to the best firms. Disclosure of inventions to the Government, investment by companies in development of inventions made under Government contracts.

As we have emphasized, the Government should strive to attract the best, and nothing less. At the beginning of the manned space program, a current joke was to the effect that just before launch one astronaut said to another "Just think this craft was built by the lowest bidder." The humor fades if the punch line were to read "Just think, this craft was built by some of the worst in the industry." We believe the Administration's Bill may achieve that result.

Mr. Chairman, the IEEE/USAB Patent Task Force feels that Mr. Ertel's Bill, H. R. 5711, is far more in harmony with our philosophies than the Administration

proposal and effectively addresses most of the reservations we have mentioned with respect to the proposed Administration Bill. Although we wish to make some recommendations for change and will submit these for the record at a later time, the IEEE/USAN Patent Task Force supports H. R. 5715.

Thank you for the opportunity to present our views before your Subcommittee. I shall be delighted to answer questions that you may have.

Mr. ERTEL. Thank you very much, Mr. Rose, for your very clear statement of the problems that this particular legislation has within it. At this point I will defer to Mr. Brown for his questions.

Mr. BROWN. Thank you, Mr. Chairman.

Let me get a couple of small questions out of the way.

Mr. Schellin, you made some references to the performance of foreign workers in foreign-owned companies with regard to the general question of productivity. I wonder if you can give us one or two citations to studies in this area. You may do that in writing later.

Mr. SCHELLIN. I will supply those gladly. Excuse me, we are clear that these are American workers in foreign-owned companies. The American workers are working in the United States.

Mr. BROWN. Yes, I understand.

Mr. Schellin, you made a very forceful presentation, which I appreciated, on behalf of small business and the substantial contribution that they have made. But I felt possibly you were not giving due credit to the role of large business. I am not known to be a defender of big business particularly. But I think we need to be aware of the fact that one of the driving motivations in all small business that I know of is that they should become big business.

The problem is not inherently that of size. I think to focus just on the size aspect may be doing an injustice, or leading to neglect of some of the other problems.

On the other side of the coin, we have the fact that many of the most innovative small businesses come from individuals or from small businesses which have been spun off from big businesses.

This is a matter which has occurred very frequently. It is best illustrated, I think, in the electronics field, places like the Bell Labs, other large business research facilities have creative individuals who for one reason or another have gone out and begun very successful small businesses which they hope will become competitive with the Bell Labs at some point in time.

I think what we are interested in is undertanding this dynamic situation and how it can be nurtured. This is not to downgrade the mass of data which you have so well pointed out which shows the exceptional contribution of small business in terms of innovation and creating jobs in the economy, and various other things that they have done so well. And I have felt that that should be a part of the record.

It seems to be that all of you have tended to be somewhat in agreement on the fact that the greater incentive through the granting of title to patents would be a productive step to take. And I am inclined to agree with this position in the abstract. I think the

ideal situation which would have many benefits would be that a person undertaking Government funded research and development would have full title and rights to any patents that developed out of that and any other benefits that might come from it. And that that would provide a very useful, new incentive for business of all sizes to do their very best work in terms of accepting Government research and development contracts.

And we could make an argument for it on the basis that public welfare would be served by having this enhanced commitment to commence in the performance of these kinds of contracts.

The point that comes up in any discussion of this sort, however, gets into a more abstract field, that of the public's perception of equity. And here we run across the same sort of politics that is involved in the windfall profits tax, for example. There is a widespread public perception that the enhanced profits going to the petroleum companies at the present time do not meet standards of public equity, which is translated into the politics of the situation. And we face this same kind of consideration in connection with this debate on patent rights.

I can assure you that within the Congress there would be substantial obstacles to granting a free right for all patents developed out of Government funded research for political reasons stemming from this concept of equity.

I would like to know how we can overcome that. Now the recoupment provisions are one step aimed at trying to overcome that. There might be other ways. There might be royalty provisions, for example, residing in the Government which would help to overcome that. I think it is unrealistic on the part of all of you gentlemen who testified for unrestricted rights to think that that will fly politically in terms of getting any substantial improvement in the present situation.

So I pose the question to you, are there alternatives here which would be politically viable which would allow those of us who have to think in political terms to say not only are we enhancing the incentives for innovation, but we are protecting the public's right to fair treatment; we are contributing to their sense that there is some equity in the system?

Now the alternative to that is for those of you in the large corporations to convince the public that what you are doing is in the public interest and that your right to these patents would be reflected in your ability to serve them more adequately. And you have not done that; I can tell you that very honestly. Just like the oil companies have not made their case, that those profits that they are making will be returned to the public interest. The public does not believe that. They do not believe a lot of what we say either, but they do not believe what the corporations say on that.

Can you help us to address that problem?

Mr. SCHELLIN. Can I respond? You pose two questions. Let me take the first one first.

One of the questions you posed was in connection with: Do large corporations spin off excess or surplus technology with staff and then nurture it?

I know GE had a progarm, I am familiar with that one. I do not know how successful it is. But I am presently editing an unpub-

lished report that is directed specifically to that and it is going to be a very easy editing job because there are very few companies in the United States, big business, that will actually do that.

What generally happens, in Silicon Valley, which you are familiar with, the people leave the employ and start their own company, not with favorable viewpoint from their previous employer, so that is something else.

Now turning to the second question that you posed, as to what to do today, let me recommend this: That if a bill such as H.R. 2414 and companion bill in the Senate are passed, we are dealing then with a segment of the problem. We all know that small business gets the ratio of Governent contracts to big business as 3.5 percent, that is the percentage of the R. & D. dollar that goes to small business from the Federal Treasury. That is a very small amount. That is what we are essentially dealing with, a miniscule portion.

Now if we say that small business is at the competitive edge and if we say that we are innovative and if it works, assuming this legislation is passed, if it works, we can then pinpoint and say "Look, this is what happened because small business got title." Why can't we extrapolate that then to the business world at large?

Then I think you have overcome some of the adverse comments that were heard from the political side of this. That would be one way of solving it.

Mr. BROWN. As I said, Mr. Schellin, you are a very eloquent spokesman for your constituency and I wish I were as good.

Mr. MANBECK. May I comment a bit on the recoupment? It is, we realize, a difficult political problem.

On the other hand, we are here to testify on what we honestly think is best.

Mr. BROWN. I understand that.

Mr. MANBECK. There are two problems with recoupment. How we get these across to the American public, I do not know. I think the American public as a whole regards Government patent rights with a large "ho hum," to tell the truth.

Mr. BROWN. But they regard the decreasing ability of this society to compete in international markets with more than a ho hum.

Mr. MANBECK. That is quite true, I agree. There are a lot of other things that at least the Committee on Economic Development is urging the Government to do in that respect. But we come to two points:

First of all, serious administrative problems, particularly if recoupment is done on a patent-by-patent basis, where we are dealing with large pieces of equipment. It is a real problem; there is a question whether the Government even would get back enough of the cost to pay the people.

The second point, and equally more important in the area in which we live, is that we are continually in competition with foreign competitors who are sponsorsed by, supported by, financed by their governments. We are out there often trying to get a new piece of equipment in. The initial price of that equipment is very important. To the extent that it is increased, let's just pick a figure out of the air, $80,000, for example, on an aircraft engine, it makes it that much harder for us to get started with that commercial

program and come down the learning curve, where the price of equipment then begins to get lower.

However, from the very beginning, every dollar we make the Government gets half, or whatever the then current tax rate is, and we really—do not ask me to prove it because I cannot—but we really think the Government gets a good return through our tax dollars.

There is also another factor, and this I think is primarily in military products which are transitioned to the commercial stage; this would not necessarily apply in the case of contracts directed initially toward the development of commercial equipment. Many, many times the Government gets significant benefits through improvement in its own equipment as a result of the money which the contractor puts into transitioning to the commercial product. You often get experience a lot quicker and a lot more of it with the commercial product; problems arise which you fix in your commercial product and then the fix goes back into the military product with no R. & D. charged whatsoever for the Government. How to get those points across to the American public, I wish I knew.

Thank you.

Mr. BROWN. Do the other gentlemen wish to make any comments on this point?

Mr. LINDSAY. Mr. Brown, I concur with your statement that this is a difficult problem to explain.

I am not sure that I can add a great deal to the political dimension, but from the logic of it, it seems to me that with the administrative difficulties, the accounting problems, and the tax problems, we are all just swamped with highly complex responses to Government regulations. These are all, in the aggregate, very expensive to business, regardless of size.

Mr. BROWN. Let's talk about logic for a moment.

Under the present sytem that we have, which is not particularly logical, we could do a great deal better toward enhancing the dissemination of technology and patents developed out of Government R. & D. than we are doing if certain things can be accomplished.

For example, we are deeply into efforts to develop new technology, photovoltaic cells is an excellent example, communications satellites is another; these both may revolutionize our economy. Yet we are not moving as rapidly as we should because of either the private sector not devoting the resources and imagination necessary in these fields, or cannot for one reason or another.

There are disincentives to their doing it. Yet the Government is precluded from undertaking a process which might lead to the faster commercialization of some of the developments that are taking place. We are grappling with this right here in the committee because there is what you might call the adversarial attitude that exists between the Government and the business community. They do not want to see the Government involved in facilitating commercialization because they do not know how far the Government is going to go. They might try to end up owning the whole business. They have some reasons to be suspicious. Yet other countries do not have that kind of a situation, that adversarial relationship, and they can cooperate.

Mr. ROSE. Japan is a perfect example of the cooperation between Government and business.

Mr. BROWN. Government and business could cooperate to bring a product, say a very beneficial new telecommunications system embodying these, or new engineering system embodying these developments. The Government could bring this along to the point where it was clear, where the private sector could take it over and could proceed to do the marketing that they could do best, and yet there are political obstacles for our doing that as a congressional policy-setting group.

I do not have any better answers than you do to this, but I feel we are going to have to look at this broadly, as the Committee for Economic Development has, and somehow both the Government and private sector are going to have to make some adaptations here. This is the thrust of what I am trying to get across to you.

I do not know how much further I ought to make this point, Mr. Chairman. Perhaps you would like to take some questions.

Mr. ERTEL. Thank you, Mr. Brown.

Obviously he has taken the questions that I had thought about, which is the recoupment provision. He has expressed it extremely well.

Politically I agree with him. I do not believe there is anything going to pass this Congress without a recoupment provision, whether it is called recoupment, payback, royalty, I do not care what term you use; there has to be some provision for the Government to get back what we figure is an equitable amount for what we put out.

I wish I knew how to design it. Rather than have you tell us that logically it does not work, I would rather have your collective intelligence turned around the other way and tell us how it could be made to work, because I think that is one of the problems we are going to be facing.

The provision that we put in—whatever the number is—H.R. 5717, I guess, was that we did not know the answer either. We passed it to the agencies, like we do a lot of things. We said "You come up with a standard provision and in 18 months come back to us."

Mr. Schellin, your group has said you want a recoupment provision. The administration bill has to have that. Maybe the reason they do not have it is they cannot figure out a way to do it.

Mr. SCHELLIN. The third draft had it, the fourth one did not.

Mr. ERTEL. I do not know which draft we are dealing with. The draft that I have seen does not have it in.

Mr. SCHELLIN. That is right.

Mr. ERTEL. Therefore, I have some real pause with that.

Mr. BROWN. Would the gentleman allow me to interrupt at this point?

I think, if I may just venture another political opinion, there might be serious question that a bill such as Mr. Ertel says, which allows licensing, even with recoupment, could pass under the conditions that exist today. I think only if we were able to demonstrate an effective, relatively well-supported recoupment provision of some sort, would it have a chance vis-a-vis the administration's bill?

That is a personal opinion.

Mr. ROSE. You can do that by having the licensing handled through the company and any royalty income from licensing, the Government can share in to the point of recoupment. That way you do not directly impact the price of the product that has been developed under the research.

Mr. ERTEL. One problem with that, that assumes that the corporation like General Motors goes out and licenses to somebody else. If they utilize the product within their own organization, how do we get a recoupment back we paid for R. & D. for General Electric to develop?

GE, as pointed out here, is a multifaceted corporation. Typically, if it was one of Mr. Schellin's corporations, they would have to go out and license it, because they do not have the ability to do that.

Mr. ROSE. It depends whether you want the recoupment or the aura of recoupment.

Mr. ERTEL. What Mr. Brown is saying, and I would agree with it, is that we want a substantial income to the Government, whatever term you use, to provide that we are getting back something for what we laid out.

We are giving you a tremendous advantage. We are giving you research and development dollars of the American people. I paid those, she paid them, everybody in this room paid them. Yet your corporation or your particular entity has the benefit of those to the exclusion of somebody else because it was referred to you as a Government contractor. Therefore, we are saying if you are going to get some big benefit from these dollars which we are providing to you, we ought to get back something of it.

Mr. ROSE. Don't you get back 50 percent of it anyway?

Mr. ERTEL. It may be. But maybe you go overseas and you divert the profits overseas and we will see that 30 years down the road, maybe.

Mr. PAYNE. Mr. Ertel, I think I could argue the equity side of this the other way.

Mr. ERTEL. Good. I hope you have a good one.

Mr. PAYNE. There is a great deal of equity the other way. I am not sure it would ever be salable politically even if we could convince you. Certainly the American public is getting the use of inventions commercialized; jobs are created, our industry is better able to compete with foreign industry, we have exports which improve our balance-of-payments situations.

We could go through a whole list of those types of advantages which the American public is getting from the technology that is being used. But I tend to agree with you, I am not sure that would ever sell politically.

There are ways to set up recoupment, such that it might not competitively impact upon the contractor, in the same way that we set up license agreements so that the licensee is able to operate competitively. There are ways to set up sliding or graduated royalty scales; there are ways to put minimum and maximum limits on royalty payments. There are a variety of techniques that might be explored for coming up with something which would be politically acceptable and yet very workable from the standpoint of the contractor.

I really think you need a sales job on equity but maybe going along with it, we are going to have to think about some licensing techniques that could be used to recoup moneys, yet not competitively affect the contractor who is out competing with British, French, or Japanese companies, in various markets. We do not want to damage that competition by recoupment. Perhaps there are ways to avoid that.

Mr. ERTEL. Well, I think you have done exactly what I asked, that you turn it around and figure out how we can do it. I hope that you will continue in that and see if you can't come up with something better than what we have come up with, because we are looking to your intelligence and your brains to come up with a better solution to the problem.

Just to comment on your one statement, we get 50 percent back through the tax mechanism and we create jobs. All that. That is all fine and dandy, I agree with that. But, you still have the perception and rightly so that we are preferring one segment of our society over another segment with Federal dollars.

Mr. Schellin would tell you if we apply the across-the-board title to the contractor, somehow small business is getting adversely affected by that, because bigger business has a competitive advantage somehow and therefore, they should not get it. I think that is the gist of his testimony.

I would suggest to him that if I am out there as a private sole proprietor, I probably cannot get a research and development contract with the Government; therefore his little entity of 500 people, which is still a small business, has a preference over me. And I am being prejudiced as a sole proprietor because I cannot get into that. I do not have the expertise, I do not have you gentlemen with all your brains and ability to come down here and negotiate with Government contractors so I can do research and development in my backyard, to build my little still to make alcohol fuels. I do not have that, so I am prejudiced. Thus, we are talking about equity between groups of people.

Let's hear from General Electric after that.

Mr. MANBECK. I would like the record to show that at least I am not agreeing with Mr. Schellin's testimony that big business receives preference over small business, thank you.

Mr. ERTEL. I think we have had a very enlightening day, to me, but before you pack up I have one more question regarding fields of use. We have a patent attorney and we have some of you people. Tell me, you are contracting with Government; now the bill is in effect and you have to select a field of use; what is going to be your approach?

Mr. ROSE. Select that which I know I am not going to use and try to hold the rest, which is the way I normally handle field-of-use licenses. I usually say I will give licenses in certain fields only and hold everything else back.

Mr. ERTEL. You are going to go for the broadest claims you can get?

Mr. ROSE. As long as there is some reason for me to believe that I would ever have use for it and I would just give up that which you are not going to need.

Mr. ERTEL. What you are essentially saying is, you are going to get a patent; is that not right?

Mr. ROSE. Not quite.

Mr. ERTEL. You are actually going to get title?

Mr. ROSE. I am going to try to get the best claims I can get in it of course, unless I feel the Government is going to take title, and then I will try to narrow them, obviously.

Mr. ERTEL. In other words, you are going to be very clever?

Mr. ROSE. Not very clever. I am not going to come here and try to tell you we all believe in motherhood, what have you, but the fact of the matter is, if I feel the Government is going to get title, I am going to narrow the claims. If my client is going to have the title, I am going to broaden the claims.

Mr. ERTEL. That is for the patent process?

Mr. ROSE. The patent—that is going to control the coverage.

Mr. ERTEL. Then you have another purpose, you are going to try to broaden the field of use for yourself as broad as you can get it for yourself?

Mr. ROSE. If I have a feeling my client is going to keep title, I will broaden it. If I feel we are going to get—if the client is going to get a very limited exclusive field, then I probably would try to limit the claims to that.

Mr. ERTEL. I think you misunderstood.

Let's assume a field of use, administration's bill is now law, as is.

Mr. ROSE. All right.

Mr. ERTEL. You are a Government contractor, and you are going to negotiate with the Government. But coming in, you are not within the small business where you have title, rather you are within the field of use area. When you come to negotiate with the Government are you not going to try to, No. 1, start with the broadest field of use possible?

Mr. ROSE. Sure.

Mr. ERTEL. You are going to start with—I do not know, you cannot say with the world, but you are going to have to do it by, excluding things, taking an all-inclusive exclusion. Then you are going to keep narrowing it and you are going to be in the negotiation process. It seems to me the same thing as drawing up a patent claim.

Mr. MANBECK. It is going to be a great administrative problem, it is going to take time.

Mr. ERTEL. You are going to have to negotiate with the Government, I assume.

Mr. MANBECK. That is right.

Mr. ROSE. Negotiating before the invention is made.

Mr. ERTEL. You are going to be negotiating at the contracting stage?

Mr. ROSE. That is right. I am talking about the administration's bill.

Mr. ERTEL. Then you have to renegotiate when it comes to the second look again?

Mr. ROSE. Yes, sir.

Mr. PAYNE. To further elaborate on that, most commercial inventions that I have had anything to do with have not had just one patent relating to the invention. Our patent system is designed to

obtain an early filing of patent applications. Thus, as the development proceeds, you have filing after filing after filing, and you may end up with 10 or 12 patents covering a particular commercial invention.

As that process is taking place, the invention is going to change in character, fields of use are going to change. So not only is there going to be the one negotiation in the beginning for the first application, there are going to be subsequent negotiations as the development process proceeds.

Mr. ERTEL. If there is improvement in the area, you are going to get the first patent as broad as possible and you are going to refine them down the line?

Mr. PAYNE. Without doubt, initially the contractor will try to get a very broad coverage of fields to get something as close to title as possible.

Mr. ERTEL. Anyone else have any comment? If not, thank you very much. I appreciate your time. In fact, we have impinged on your lunch hour.

Whereupon, at 12:45 p.m., the subcommittee adjourned.